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THE UNIVERSITY OF ALBERTA

GUIDANCE BEHAVIORS EXHIBITED BY MOVEMENT EDUCATION SPECIALISTS

by

JUNE ELIZABETH LEDREW

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF ARTS

PHYSICAL EDUCATION AND SPORT STUDIES

EDMONTON, ALBERTA

FALL 1987

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled GUIDANCE BEHAVIORS EXHIBITED BY MOVEMENT EDUCATION SPECIALISTS submitted by JUNE ELIZABETH LEDREW in partial fulfilment of the requirements for the degree of MASTER OF ARTS.

Jane Watkinson
Supervisor
Margaret Ellis
M. L. Rutledge

Date June 30, 1987

This thesis is dedicated to my grandmothers

Eliza Mary Hunter

and

Amy Florence LeDrew

whose dear letters and telephone calls provided a valuable source of love and encouragement throughout my graduate studies.

Abstract

The major focus of this investigation was to identify the teaching behavior sequences of four movement education specialists at a Canadian university. The study was dealt with in three phases. Firstly, the data collected were analyzed, using the Physical Education Teacher Guidance Analysis Schedule (PETGAS), to identify those behaviors typically exhibited by movement education specialists. Secondly, the data were analyzed to determine if particular sequences of teaching behavior were evident in the movement education class. Finally, sequences found most prevalent in the teaching behaviors of the movement education specialists were analyzed in relation to their applicability to a hypothesized model of cyclical behavior patterns in movement education.

Results indicated that all four subjects exhibited teaching behaviors that were relatively similar. Furthermore, in review of the instructional episodes of games and educational gymnastics, it was found that content variability was limited across individual activities.

In analysis of sequential behaviors exhibited by the movement education specialists it was found that the teachers were most likely to provide a focusing behavior or coaching point following the initiation of a task. These results served to indicate that the behavior patterns found in movement education did not differ from those reported in the instruction of other physical activities.

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I. Introduction

Introduction

The importance of modeling as a method of learning is receiving increased emphasis (Bandura, 1977; Flanders, 1970; Locke, 1983; Smith, 1985; Staats, 1975). Studies of the relationship between teacher preparation and teacher competencies have '...called into question some of our most sacred ideas about how an effective teacher behaves' (Coker, Medley, Soar, 1980, p. 131). According to McKenzie (1982) teacher training programs should focus on three factors in the modeling situation - motor skills, attitudes and behaviors consistent with a program philosophy and teaching skills. Trainees need to be informed in advance what specific behaviors they are to look for and expected to acquire. In fact, some consider the study of behavior patterns in the classroom essential in terms of establishing teacher effectiveness due to the restricted capacity of beginning teachers to process information (Smith, 1967; Locke, 1983; Rosenshine & Stevens, 1986; Westerhof, 1983). Therefore, not only should teacher preparation programs provide undergraduates with a knowledge concerning behaviors that a particular program philosophy should exhibit, but also the opportunity to observe these behaviors in teacher educators (Plack & French, 1982).

Sherman (1978) suggested that teacher preparation programs, particularly in physical education, have

identified the behaviors, or elements of teaching, but have not shown how these behaviors fit together. Westerhof (1983) speculated that 'most known behavior patterns were based on traditions, or derived from social learnings in the teacher's background or derived from philosophical traditions generated by the teacher's own needs or generated by conditions existing in the school or community' (p. 84).

There is a need to present teacher trainees with a model or flow chart to illustrate various teaching behaviors and their antecedent or consequent behaviors. Such a model may act as a catalyst in the comprehension of knowledge concerning behaviors of a particular program philosophy.

Movement education is one particular philosophy where little research about teacher's behavior patterns has been done. In a generalist program undergraduate students may only have contact with one or two of the essential factors which provide for a substantial experience in movement education. Students may be exposed to the behaviors of movement educationalists but due to undergraduate program time restraints may not have the opportunity to enhance comprehension or application. Perhaps by studying the sequential nature of descriptive behaviors exhibited in movement education teacher preparation courses, behavioral sequences can be identified, critically examined, and developed into a model or flow chart for undergraduate comprehension and application.

According to Stanley (1977), behaviors which may arise in a movement education situation involve the teacher setting the task and observing the general situation to determine a possible need for upgrading the standard of performance. If this is evident, the teacher may select student demonstration as a mode of learning whereby questions or specific feedback regarding the task objective may assist in stimulating thought. Also, Stanley suggests that the appropriate use of verbal coaching or stimuli during movement may serve to improve or guide the learner toward enriching or developing the awareness of their movement.

Fowler(1981) stated that if questioning behaviors are posed concerning variations of an activity, appropriate answers should be discussed. Thus questions should elicit answers which guide student discovery toward lesson objectives. Fowler goes on to state that feedback behaviors exhibited by the teacher need not be complicated. A physical prompt such as a head nod or a smile lets the learner know that the teacher is appreciative of the student's performance.

The teaching principles or behaviors of movement education are not cast in iron. Fowler readily admits that there may be times when the teacher must take a direct approach to teaching rather than using the guided discovery or problem-solving methods. As these methods have rarely been qualitatively examined in a movement education setting

it would be of interest to code and analyze apparent behaviors.

Statement of the Problem

The major focus of this research will be the identification of particular teaching behavior sequences of movement education specialists. By design the investigation will be dealt with in three phases. Firstly, the data collected will be analyzed to identify those behaviors typically exhibited by movement education specialists. Secondly, the data will be analyzed to determine if particular sequences of teaching behavior are evident in the movement education class. Finally, the researcher will focus on the antecedents and consequences of discrete events and try to determine if these sequences merge into cycles and if the cycles can merge into models (Sherman, 1978, p. 28). The long range plan for the information collected in this study is to provide a model or pertinent data which may help enlighten both the specialists and students regarding teaching behaviors evident in a movement education situation.

Delimitations

1. The study will focus on the teaching behaviors of movement education specialists.
2. The subjects will be delimited to instructors of elementary movement teacher preparation courses offered

at a Canadian university.

3. The study will focus on behaviors in Mawer and Brown's (1982) Physical Education Teacher Guidance Analysis Schedule (PETGAS) including various modifications to provide greater accuracy in analysis of the teacher's behaviors.

Limitations

1. The study may be limited to the extent that the specialists are aware they are being videotaped. This may generate a bias in teaching behaviors that is reflected in the data. Due to the teaching experience of the subjects and decreased content variability, it is assumed that this bias will be minimal (Lombardo & Cheffers, 1983; Joyce & Showers, 1980).
2. The study may be limited in that the teaching behaviors observed are characteristic of those that would be used in teaching movement education to university students. It is not known whether these behaviors are consistent with those used by teachers of other students.
3. This study is also limited due to the use of videotape and a remote microphone and receiver on the body of the subjects. This may result in a slight physical restriction during the teaching episode. Teachers had to maintain proximity to the camera and could not perform vigorous physical acts and were generally not able to move in the space directly in front of the camera.

Terminology

Movement Education: '...an approach to teaching motor skills, games, dance, and other activities, that utilizes a process of discovery learning and incorporates the movement factors proposed by Rudolf Laban. Hence, movement education implies a method of teaching as well as the content of what is to be taught' (Fowler, 1981, p. v).

Behavior: This is an observable action of a person.

Sequence: This is a chain of behaviors which may include an antecedant and consequence action to the foremost observable behavior.

Movement Education Specialist: Anyone employed full-time to teach Movement Education at a university level.

II. Review of Literature

Introduction

Bruner (1974) defines competence as knowing 'how' not just knowing 'about'. It is known that a teacher educator is one who teaches teachers. 'For teaching to occur, someone (a teacher) must be teaching someone (a student) about something (a curriculum) at some point in time (a milieu)' (Lanier & Little, 1986, p. 528). In teacher education it is easy enough to determine that the 'student' is generally a young adult enrolled in an institution of higher education. The 'curriculum' of teacher education focuses on general education, subject matter specialities, and pedagogy. The milieu or context of teacher education includes general society, the university, the school district, and various other contextual settings that affect teacher education. The 'teacher' in teacher education represents a diversity of roles and backgrounds - university professor, graduate assistants, public school supervisors and others. In contrast to the three previous factors, very little research has been compiled concerning those who teach teachers. And as Bruner stated, competence in teacher education can be defined as knowing 'how' to model these behaviors in the classroom and not just 'about' the subject that is taught. Descriptions and analyses of what actually goes on in undergraduate teacher preparation programs in physical education do not exist, and indeed, are rare in any teacher

education setting (Koehler, 1985).

Instrumentation and Methodology in Studing Teaching

There are several different approaches to research in teaching. These approaches, or descriptors, have been derived from research on classroom teachers, while others are unique to physical education. Some stress learning and learners while others may emphasize teaching and teachers. Lawson (1983) states that these descriptors include interaction, process-product measures, and descriptive-analytic approaches to teaching and its ecological context. Accordingly the criterion for excellence in research is.....

> ....the replication of initial findings in subsequent studies. Replication is also important because of the quest for generalizability; investigators are searching and researching for laws, or law-like statements, about the relationship between teacher behavior and student achievement (p. 12).

Systematic observation instruments have been successfully used as instructional feedback tools to train teachers. Results of studies (Gusthart, 1983; Imwold et al., 1984; Lombardo & Cheffers, 1983) investigating the effects of training teachers to use Flanders Interaction Analysis, or an adaptation of the system, repeatedly supports Flanders (1970) debate that 'attention to teaching behavior, practice

in analyzing it, and performing it with feedback tends to incorporate such behavior in the teacher's repertoire' (p. 352).

Lombardo and Cheffers (1983) examined variability in teaching behavior and interaction in the gymnasium. Cheffers' Adaptation of Flanders' Interaction Analysis System (CAFIAS), which describes both verbal and nonverbal teacher and student behavior, major behavioral parameters, and interaction patterns, was the instrument used to code the behaviors of the four subjects in this study. During the class, the observer coded the behaviors of the teacher every three seconds, or upon every change in behavior for forty observations. Parameters observed during the forty observations included, team sports (n=74), movement education (n=20), self-testing (n=47) and, miscellaneous activities (n=19). Results of the study indicated:

1. teaching behaviors and interaction patterns vary minimally over successive days. Modifications in the current practice of random observations, for the purpose of supervision, were not justified at this time;
2. the teaching behavior and interaction patterns recorded indicated that traditional, direct teaching styles prevailed in the movement classes observed;
3. the variables of time of day, grade level, and day of the week of the class, had a negligible

influence on the teaching behavior and interaction in physical education classes; and

4. the content of the lesson was found to be an influential factor on interaction and teaching behavior in the gymnasium. Teachers seemed to vary their behavior from teaching unit to teaching unit (p. 47).

Wuest (et al., 1982) studied teaching using a multidimensional approach. Several behavioral dimensions were examined using various instruments. CAFIAS was employed to measure the overt behavioral dimension. The emotional dimension was measured using the Individual Reaction Gestalt, Second Edition (IRG II). Behavior was described on a continuum from low intensity, little apparent involvement to high emotional intensity, ultimate involvement. The third dimension, psychological, was described by SELF-IRG, a modification of IRG II, where the subjects' reactions and involvement to selected events were self-reported. Finally, heart rate (HR) monitored via an electrocardiogram (EKG) measured the physiological response.

The procedures employed for data collection involved a 3 day period in which the subjects were familiarized with procedures during the first 2 days. On day 3, following the acquisition of HR baseline data, the 2 teachers and 2 volunteer students were videotaped during 3 lessons. Throughout the taping HR was continuously monitored and immediately at the conclusion of each lesson the teachers

and students recorded their emotional level via the IRG II.

It was discovered that the multidimensional analysis of critical teaching incidents provided a greater wealth of information concerning the teacher, the student, and the nature of their interactions. Thus, this multidimensional approach offered another avenue to pursue in describing teacher effectiveness.

The Observational System for Instructional Analysis in Physical Education (OSIA-PE), adapted by Olson (1979), is a thirteen category observation system designed for the classification of gymnasium-related instruction. It is a data collection and processing system that can be used to describe instructional events while simultaneously employing as many as seven levels of meaning. Event recording with a convention to code those events lasting longer than five seconds at a fixed five-second interval pace is the recording system used with the OSIA-PE instrument.

Olson (1982) studied relevant instructional configurations in physical education settings and employed this instrument to determine teacher behavior patterns and sequences of classroom behavior. Olson analyzed 24 videotapes of elementary, junior high, and senior high physical education classes. A computer program was used to analyze the data. In several instances behaviors with the primary meaning, such as teacher solicitation, were collapsed into one behavior regardless of whether it was directed to the class, small group, or individual. Results

indicated the most frequent chain of three behaviors (23.1%) was teacher initiating, teacher soliciting, and student responding. The most frequent chain of four behaviors (29.7%) was teacher soliciting, student responding, teacher initiating, and teacher soliciting. Not all teachers used the same behavior sequences. However when a sequence was found to exist for a teacher during one aspect of a lesson, it was likely to appear for the same teacher in other portions of the same lesson.

Gusthart (1983) studied instructional behavior of 20 preservice physical education teachers. A total of seventy audiotapes were analyzed using the Observation System for Content Development-Physical Education (OSCD-PE). The OSCD-PE instrument contains 36 constructs which could be used to describe teacher behavior in physical education. Continuous coding was used to record how teaching behavior functions in terms of the content dimensions of referring, informing, organization and applying. Results indicated that high levels of desirable behaviors were achieved in the first teaching experiences but unfortunately some of these levels were lost as the degree of monitoring decreased and as the number of children and the amount of time in teaching increased.

The effects of self assessment and goal setting on verbal behavior was examined by Cusimano (1987). Sixteen elementary physical education teachers were monitored for the verbal teaching behaviors of positive specific feedback,

corrective specific feedback and acceptance of students' skill performance ideas. The pretest involved the audiotape portion of the lesson that focused on specific instructional skills. This portion was selected as it provided the opportunity for teachers to use feedback to develop and define specific skills. Thus the lesson focus was 15 to 20 minutes of a 30 minute class period. Event recording tallied the number of times a specific behavior occurred. During the intervention phase, the experimental group participated in two inservice sessions to learn self assessment of the defined behaviors. Following this five week period all subjects were audiotaped during three 4th grade classes. The results within the limitations of this study concluded that corrective specific feedback and positive specific feedback can be modified through the use of a planned intervention package.

Another method of research design in physical education which has recently attracted further attention is naturalistic research. Earls (1986) states that naturalistic research is particularly well suited to:

1. generating hypotheses,
2. discovering potentially important variables, patterns and relationships,
3. gaining increased understanding of the meanings of events to participants, and
4. examining the less obvious and apparently more ambiguous aspects of life in schools (p. 40).

Thus naturalistic research is based primarily on first observation of a phenomena as it naturally occurs.

Schempp (1987) states the purpose of a naturalistic researcher is to.....

> ....identify behavioral trends and regularities of a given social site by connecting the meanings and interpretations of the behavior occuring (sic) in that site. Such an analysis allows the physical education class to be understood by offering explanations for the behavioral occurrences, and provides the insight necessary for alternatives to become visible and for change potentials to be recognized (p. 117).

Schempp goes on to express the role of the naturalistic researcher as one who does not try to 'force fit' a particular model or 'break down' data collected from various perspectives such that themes and trends become recognizable.

Research in Movement Education

The term movement education has become an all-encompassing catch phrase that has taken on many disguises at all levels of its implementation: university, school boards and, community. It is difficult to define movement education without inquiring about the background of the individual asking the question. What their knowledge and philosophies entail may determine how they interpret the

varied definitions of movement education. Throughout its relatively short history, movement education has been referred to as 'basic movement', 'movement training', 'movement exploration', 'human movement studies', 'the art of movement' and other similar titles. The difficulty of this vast array of titles is that each tends to depict or portray movement education in a slightly different manner. However, regardless of the title, there are certain elements and commonalities that are inherent in any definition of movement education.

In order to understand what movement education is, it is necessary to state what it is not. That is, the philosophy and concept of movement education is very different from that of traditional physical education. The principles of movement education 'provide a basis for understanding all movement...all activities are selected on the basis of how well they can foster and develop the concept and movement principles...' (Kirchner et al., 1970, p. 15). In other words, the process as well as the final product is instrumental in development.

Rose Hill referred to movement education as 'a specific pedagogical method which encourages children to learn for themselves; the emphasis is on the student's active participation rather than on the teacher's presentation of information' (Hill, 1979, p. 18). Movement education is said to involve a child-centered approach where the focus is on the learner gaining an appreciation and understanding of

functional and expressive movement and which provides opportunities for the application of this awareness in a variety of physical activities. In order to gain this 'appreciation and understanding', the child is guided by the teacher through a problem solving discovery process. Problems and tasks are presented to the child to be solved individually through exploration and discovery using the four principles of movement based on the work of Rudolf Laban - an awareness of body, space, effort and relationships. For example, a task might be stated 'move using a hands/feet locomotor activity'. The children, depending upon their abilities and limitations, may decide to solve the task by walking on 'all fours' or by doing successive cartwheels. How they solve the task is their responsibility. Thus, movement education can recognize the individual differences of the students and allows for creativity and manipulation of materials and equipment. Furthermore, as Hill and others (Dennison, 1965; Wilson, 1979) stated, movement education involves a process of integration whereby the students do not have to accept the standardized procedures outlined by the teacher but are free to progress under the teacher's guidance and discover within the limits of their own capabilities.

Not only does movement education imply a method of teaching but also the content of what is to be taught. It continues to use the traditional physical education content (generally games, dance and gymnastics) but it adds its own

subject matter to serve as the foundation for this content. In other words, the themes of body awareness, space, effort and relationships become the foundation upon which the movement abilities within the various context areas are developed. Thus, students master various motor skills by understanding and analyzing the movement principles contained in them (Hill, 1979; Kruger & Kruger, 1977). To ensure understanding, movement education also requires that the child articulate and verbalize the movement vocabulary.

Ellis and Robbins (1979) state that as movement is the basis of all physical activity, a conceptual approach to movement is essential in teaching physical education. Through an awareness of individual abilities and careful observation, the teacher can encourage maximum performance from each child.

> To allow for experimentation, discovery, selection and consolidation the teacher must necessarily employ a combination of direct and indirect teaching methods. Problems presented by the teacher are related to the management and control of the body. The problems, based upon movement analysis, are designed to make the child aware of what, where, and how he moves (p. 4).

Zeigler (1979) stated the result of movement education is that it not only removes the primary focus of concentration from the final product, although the teacher has a lesson objective toward which successful experiences

will eventually funnel, but also allows each individual to experience success. Consequently, it comes as no surprise that proponents of movement education believe that children learn most efficiently and effectively when they are allowed to discover which movement sequence is best for them.

Locke's (1969) description and critique of movement education, although somewhat dated, expresses an opinion often heard today. Locke suggested that movement education is any physical education program that a teacher chooses to call movement education (p. 203). Bean (1985) suggests three significant factors which have contributed to negative perceptions of movement education:

1. important differences of interpretation in the various definitions of movement education approaches and content;
2. the relatively uncritical acceptance of claims made for movement education by its proponents; and
3. an inflexibility shown by many movement educators in discussing the applicability of the process, particularly in the context of existing, more traditional programs (p. 20).

Bean then goes on to state that if practical acceptance of movement education beyond its theoretical approval is to be recognized then proponents should objectively attempt to clarify or validate the theory.

A lack of empirically-backed information tends to stifle movement education theorists who still hold that movement education is favoured in direct comparison with traditional teacher-directed methods. The researcher speculates that movement education has remained virtually data-free because:

1. most advocates of movement education are funnelled into the school systems where research in the area is generally not encouraged;
2. career scholars in movement education generally do not exist; and
3. funding and time constraints provide little motivation for research in any teaching area, including movement education.

It is also evident that most advocates of movement education that are involved in higher education generally tend to produce phenomenological works (Bean, 1985; Docherty, 1972; Gray, 1985; Hill, 1979; Proyer, 1973; Wilson, 1979) or practical manuals for use in the field (Fowler, 1981; Kirchner, Cunningham, & Warrell, 1970; Kruger & Kruger, 1977; Stanley, 1977). Although these authors present sound philosophies and concerns, the fact of the matter remains that there is a lack of data to support either the theoretical foundation of movement education or the efficacy of its method.

Vallance (1975) examined the effects of movement education on the movement, visual art and language of young

children. It was found that after a twenty-four lesson time period where the experimental group functioned in a program of creative dance and educational gymnastics, the experimental group showed a noticable increase in specific, spatial word vocabulary and painting space, colour and design.

Toole and Arink (1982) studied the transfer of movement education training to new skill performance and evaluated skill improvement as a result of movement education and traditional training. The forty-seven subjects were six to seven years of age and were randomly assigned to two classes. It was found that after one thousand minutes of instruction, the traditionally trained children performed better on the throwing, catching and batting tests measured. It is worth noting that the researchers lacked a control group which may somewhat invalidate the results discussed. It is easily speculated that children aged six and seven may have experienced a learning effect during the course of this study. Also, it is difficult to assume that the children did not practice these basic play skills outside of the research environment during the period of study. A control group would have minimized the threat of these assumptions.

A Study of Fitness in a Movement Education Program (1980-83) was conducted by Bischoff and Lewis (1985). Children seven to eleven years of age, participating in a movement education program (MEP) were administered the AAHPERD Health-Related Fitness test and results were

compared to the Illinois fitness norms. Findings indicated the MEP children possessed greater skinfold thickness than the norm. Comparisons also indicated that over the three years, MEP children were consistently at or above the 50th percentile only in sit-ups.

Only one study was located on research in teaching in movement education. Mawer and Brown (1982) examined teacher guidance behavior in educational gymnastics lessons with elementary age children. Reliability figures of 0.90 and 0.88 were achieved by independent observers using the Physical Education Guidance Analysis Schedule (PETGAS) on videotaped lessons (Appendix A). Data collection involved twenty teachers from ten separate schools. Each was videotaped three times teaching educational gymnastics to the same class of nine to eleven year old children. The teachers were comprised of ten that had specialist training in physical education (PET teachers) and ten that were considered 'generalists' (NPET teachers).

Results from the study indicated that 56.5% of teacher interaction was directed towards individuals and small groups with PET teachers using a higher proportion than NPET teachers (69.5% as compared to 50.2%).

The teachers as a whole failed to terminate interactions with praise 61.5% of the time with the NPET teacher using praise significantly more often ($p < 0.01$) than PET teachers. Negative, critical interactions were used 9.2% of the time by the teachers with PET teachers. This was

significantly more ($p < 0.01$) than that used by NPET teachers.

As well as positive and negative interactions Mawer and Brown found that 72.7% of teachers' interactions seemed to be 'general comments' rather than being specific guidance information indicating how to improve movement or saying why movement attempts were good. Significant differences at the 0.01 level were discovered regarding NPET teachers' use of general comments (81.5%) compared to PET teachers (56.4%).

Questions involving movement problems were found in 10.8% of all interactions and demonstrations in 55.4%, with PET teachers using significantly more of this type of guidance than NPET teachers ($p < 0.05$).

Analysis of Teaching Behaviors

In order that teaching behaviors be analyzed in the teaching - modeling situation the function of modeling must be investigated. Teacher educators must be cognizant 'that much of the conduct being modeled at any given time is socially prescribed or highly functional; hence, it is adopted in essentially the same form it is portrayed' (Bandura, 1977, p. 40). Physical demonstration, pictorial representation, or verbal description are methods by which information can be conveyed and in turn synthesized, by the observer, into new patterns. Bandura states verbal modeling is the most widely employed as one can convey with words an almost infinite variety of behaviors that would be

inconvenient and time-consuming to portray behaviorally. Teacher educators should be aware that research has indicated that the role of modeling, regardless of which method is employed, has a powerful influence on subsequent behaviors of learners (Bandura, 1977; McKenzie, 1982; Smith, 1985).

Bandura goes on to state that models who demonstrate high levels of competence, who are purported to be experts, or who possess high status are likely to be more influential than models who lack these qualities. Accordingly, Smith and McKenzie reason that teacher educators should use the model of their own teaching to inspire future teachers. However, all too often teacher educators characteristically model a very limited range of teaching behaviors, and because they rarely teach in the school systems the behaviors they exhibit may be of little functional value to the trainee.

Therefore, teacher educators need to reflect and critically analyze their own teaching styles and inform trainees in advance what particular behaviors they are expected to acquire. McKenize also states that a variety of teaching models should be demonstrated to allow trainees exposure to a variety of different styles of teaching and behaviors.

Following appropriate modeling demonstrations the dominance of various teaching behaviors should be identified to establish which are more or less important for achieving the desired outcome. Westerhof (1983) reports that important

teaching behaviors or variables have been established without theoretical or empirical relations to pupil outcome.

Smith (1974) discussed several teaching characteristics found in the teaching of non-swimmers. While the teaching subjects were found to be effective in promoting swimming and creating a postive reaction to water, Smith found the characteristic teaching behaviors used in the lesson flexible but that an indirect warm style generally predominated. On further analysis it was found that new materials were presented in short episodes, the atmosphere was highly individualized where the child worked on generally assigned tasks and a shift towards directness was evident as learning goals increased. This trend was apparent in the analysis of the behaviors coded. It was found that following the seven hundred and fifteen behaviors coded as pupil-initiated responses, four hundred and forty-five subsequent responses were indirect while one hundred and forty-two were direct. It was also discovered that 41.6% of teacher behavior following pupil-initiated responses were in some form of acceptance while 14.1% involved directed practice.

Other teaching characteristics that were evident in Smith's study involved:

1. the learning environment is structured so that optimal levels of arousal predominate,
2. the tempo of activity is generally continuous and moderate but may be interrupted briefly by decisions of

either teacher or learner,

3. the willingness to attempt or risk- take is met with appropriate positive verbal or non-verbal reaction, and corrective feedback,
4. evaluative feedback is in relation to the learner's own past or present achievement levels, and
5. as learning progresses the teacher stretches the reinforcement schedule and becomes more discriminating in dispensing reinforcers.

Barrett (1977) stated, in Studying Teaching - Becoming a More Effective Teacher, that observing, behaving and reflecting are the three key ideas for all learning experiences. All three ideas are interrelated and effective teaching can only result by using the three ideas in relation to each other. In observing teacher behavior Barrett lists five observational tools necessary to evaluate effectiveness.

1. Location of the teacher.
2. Focus of teacher's verbal behavior.
3. Content of the lesson.
4. Movement tasks and guidance behaviors.
5. Structure of the learning experience.

Barrett also provides a teacher behavior continuum by which maximum/minimum opportunity for the learner to make decisions is assessed depending upon whether the movement task set is new or review material. Here novel tasks provide more opportunity for the learner to make decisions than do

tasks that the student has previously experienced.

In a review of teaching functions, Rosenshine and Stevens (1986) stated that teachers in treatment groups implemented many of the key instructional behaviors which were the focus of intervention packages. These key instructional behaviors included:

1. beginning a lesson with a short review of previous, prerequisite learning;
2. beginning a lesson with a short statement of goals;
3. presenting new material in small steps, with student practice after each step;
4. giving clear and detailed instructions and explanations;
5. providing a high level of active participation for all students;
6. asking a large number of questions, checking for understanding, and obtaining responses from all students;
7. guiding students during initial practice; and
8. providing systematic feedback and corrections (p. 377).

It is noted that guided practice, amount of time spent in presentation, and independent practice vary according to the difficulty of the subject material, the age and maturity of the students.

Generally, the pedagological approach to movement education is problem solving or guided discovery. From several sources Rosenshine and Stevens compiled a general model of effective instruction for several fundamental instructional 'functions' or behaviors. The model for guided practice of subject matter includes the following functions.

1. Initial student practice takes place with teacher guidance.
2. High frequency of questions and overt student practice.
3. Questions are directly relevant to the new content or skill.
4. Teacher checks for understanding (CFU) by evaluating student responses.
5. During CFU teacher gives additional explanation, provides feedback, or repeats explanation where necessary.
6. All students have a chance to respond and receive feedback; teacher ensures that all students participate.
7. Prompts are provided during guided practice where appropriate.
8. Guided practice continues until students are competent (p. 379).

One model that focused on the teaching behaviors in target skill analysis described the critical features of a skill, or theme, how they were identified, observed,

diagnosed and how appropriate remediation was formed. Mcpherson's (1987) model employed the identification of critical features involved in the biomechanics of motor skills as the basis for effective skill analysis. In adapting the guided practice behaviors proposed by Rosenshine and Stevens (1986) to Mcpherson's linear model of skill analysis, a hypothesized model is presented for teaching behaviors during a movement education class (Figure 1). This hypothesized model utilizes movement education vocabulary and was initially developed to provide information for students enrolled in university elementary movement education courses. The teaching behaviors provided in the model were developed in consideration of the guided discovery and target skill analysis behaviors as outlined by the aforementioned authors. This hypothesized model follows two cyclical patterns of teaching behavior. Incorporating the terminology from PETGAS, the cycles involve behaviors from the following major categories.

1. Task Initiation, Focusing Dimension/Questioning Dimension.
2. Task Initiation, Focusing Dimension/Questioning Dimension, Task Initiation, Teacher/Student Demonstration, Focusing Dimension.

Tentatively the accepting/rejecting dimension can be incorporated after any behavior exhibited throughout the model. The validity of the presented model of teaching behaviors exhibited during a movement education class has

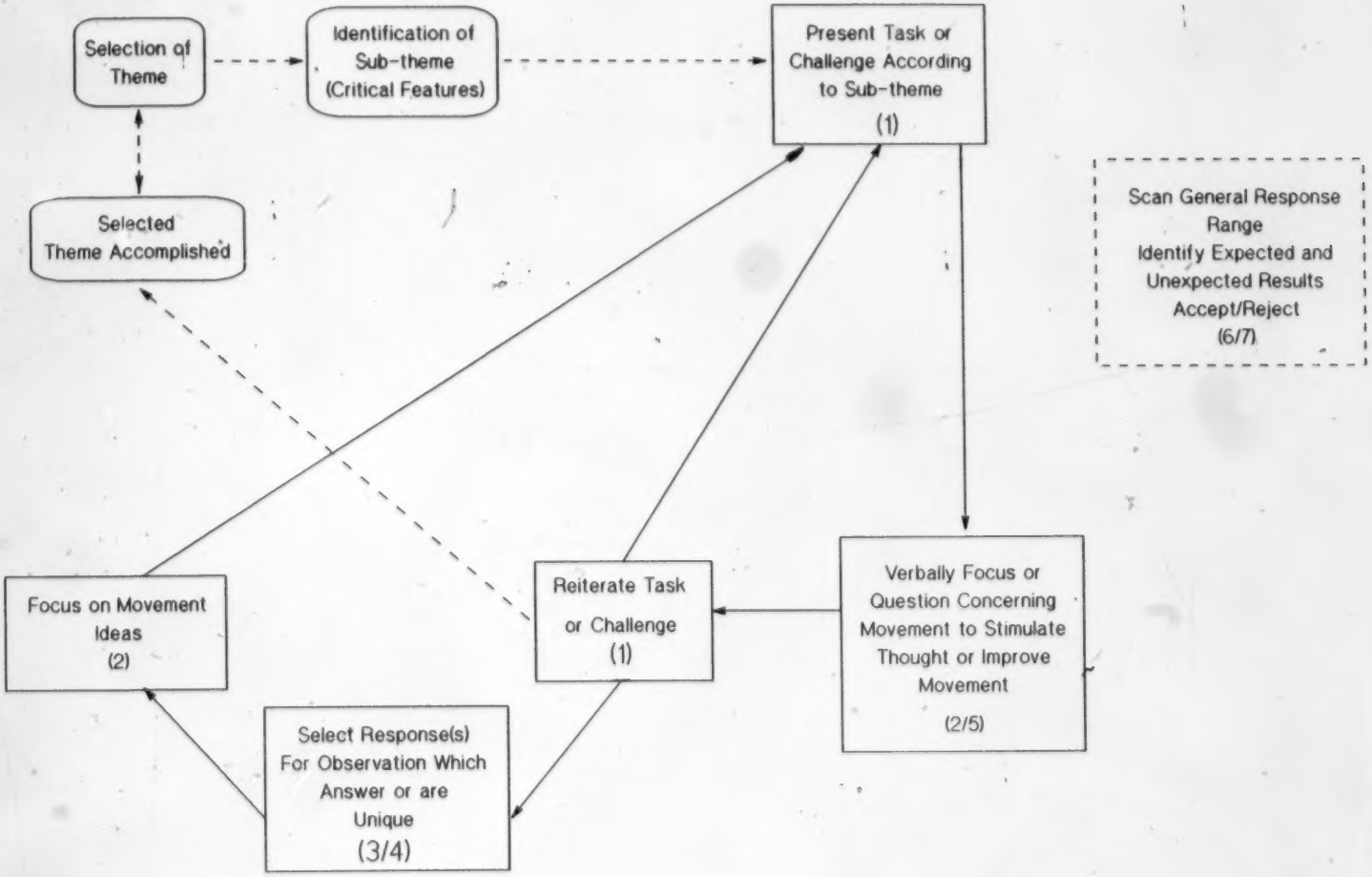
Selection of Theme
Identification of Sub-theme (Critical Features)
Present Task or Challenge According to Sub-theme (1)
Selected Theme Accomplished
Scan General Response Range
Identify Expected and Unexpected Results
Accept/Reject
(6/7)
Focus on Movement Ideas (2)
Reiterate Task or Challenge (1)
Verbally Focus or Question Concerning Movement to Stimulate Thought or Improve Movement (2/5)
Select Response(s) For Observation Which Answer or are Unique (3/4)

Figure 1. Model of teaching behaviors during a movement education class Adapted from A Paradigm For Skill Analysis: Target Goals (Mcpherson, 1987)

not yet been examined.

III. Methods and Procedures

Introduction

This study presented itself in three distinct portions. The first portion involved the coding of teaching behaviors from videotaped episodes of teaching in a movement education class for university students. Consequently an elaborate yet specific description of each individualized instructional episode was prepared. The second portion of the research focused on a thorough analysis of the instructional episodes. Finally, the data gathered will be comparatively analyzed with consideration given to the hypothesized model of teaching behaviors in movement education from the preceeding chapter. Pieron (1984) contends that 'establishing a theory of physical education teaching implies hypotheses drawn from the body of knowledge and verified by data gathered through observation and experimentation' (p. 19). Various review articles on research in teaching physical education suggest that many documents analyzed are not data based and that many researchers theorize without adequate research support (Locke, 1983; Locke and Dodds, 1985; Pieron, 1984). The present study attempted to describe and analyze teaching behavior in a class for teacher educators in an effort to provide a data-base for discussion of a model for teaching movement education.

The Subjects

Initially the subjects of the study included five instructors at a Canadian university. It was found that one subject did not prepare for the teaching episodes and therefore the content validity of the behaviors being recorded was deemed inadequate. The subject did not follow the guidelines set by the researcher for each teaching episode.

The four individuals were referred to as movement education specialists due to their extensive background in the theory and practice of the philosophy of movement education. It was found that the number of years the subjects taught elementary movement education teacher preparation courses ranged from 5 to 15 years, with the average being 9 years.

Procedure

The purpose of this study was to observe teaching behaviors in elementary movement education teacher preparation courses. The subjects volunteered to be videotaped for 2 episodes of 10 to 15 minutes during their regularly scheduled class time. This collection of raw data occurred during March 1987.

Videotaped recordings were collected of instructional episodes in a gymnasium on the university campus. Also each subject was fitted with a remote microphone to more accurately receive the audio behaviors of the teaching

episode.

The university students involved in the investigation were enrolled in elementary movement education courses. It was the wish of the researcher that the observations be as unobtrusive as possible, but the university students were aware they were being videotaped. This factor may also have indirectly modified the teaching behaviors of the subjects.

Content Validity

In order that behaviors identified in the teaching episode be reliable across all subjects various restrictions were placed on the content criteria. These restrictions for content validity were facilitated by using several procedures as outlined by Kirkendall et al. (1980, p. 106).

1. Analyze the objectives of instruction to make sure they are relevant and are represented in the episode.
2. Carefully examine textbooks and other reading materials assigned to the class.
3. Ask other experts in the subject field, such as fellow teachers, to rate your test questions.

The analysis of instructional objectives relevant to the desired outcome of the teaching episode required that guidance during a movement task be evident. Thus it was agreed that the movement training/skill development portion of a lesson would be the ideal time to identify guidance behaviors as compared to the introductory/warm-up activity or final culmination/game situation. The rationale for using

the movement training/skill development portion of a lesson was primarily based on the researcher's knowledge that this is the portion of a lesson where the teacher's guidance behaviors play a critical role in the learner's movement outcome. Thus a majority and perhaps the greatest variety of the interactions between the teacher and the student should occur here.

The second procedure followed to ensure content validity concerned the subject activity and movement theme which was to be the focus of the teaching episode. Careful examination of course objectives, material previously covered, and consultation with an expert in the subject field helped to determine episode content. It was decided that the activity areas not already covered in class by the four subjects, games and educational gymnastics, would be the focus of the episodes.

After the activity categories were determined, the movement themes were selected to provided a framework within which the instructor could focus on a select few movement skills or a variety. Therefore each instructor was asked to focus on 'projecting using the feet, and passing techniques' in the games activity and 'transference of weight using body actions such as jumping, stepping, and rolling, with eventual emphasis on one of these actions' in the educational gymnastics activity. It was also specified that equipment be limited to the use of utility balls in the games episode and mats in the educational gymnastics

episode.

The final point of instruction concerning content validity was that the subjects were asked to teach the university students, not teach the students how to teach children. This was deemed necessary to limit lecture-style instruction which may occur and thus negate time spent focusing on the movement theme.

The Instrument

The instrument used for recording the verbal teaching behaviors of the movement specialists was an adaptation of Mawer and Brown's (1982) Physical Education Teacher Guidance Analysis Schedule (PETGAS) (Figure 2). Several behaviors were recategorized or expanded to cover the behaviors which the researcher felt were either an intricate aspect of the teaching of movement education or, would make the coding procedures less complex. The major behavior category added was 'Task Initiation' while the categories expanded were 'Focusing Dimension', 'Organizing Dimension' and the 'Questioning Dimension. The first two categories involved the addition of a 'reiteration' of a behavior code and the latter separated the original behavior into two distinct codes.

In light of the model for movement education which hypothesizes the behavioral sequences that may be evident when using a guided discovery or problem-solving approach to teaching, and subsequently applying the behavioral codes

from the PETGAS, the following sequences may appear evident.

1. Initiation of the task followed by coaching points to improve or focus the movement exhibited by the students. If the movement exhibited is within the acceptable response range that the teacher has set then the next task or challenge can be set which may initiate a new movement idea or follow-up on the previous task set.
2. Initiation of the task followed by coaching points to improve or focus the movement exhibited by the students. The teacher may then reiterate the task and ask questions or provide demonstrations to check for understanding. Through a focusing of the learner's attention on specific points the teacher may then decide whether to move onto the next movement idea or task.

It is also worthy to note that the accepting/rejecting behavior may be evident at any point in the above mentioned sequences whether it be for corrective types of feedback or class discipline and management.

Hence, the two cyclical patterns presented are being tested using the behaviors cited in the modified PETGAS.

The original instrument was considered valid since it had been previously tested and implemented in Mawer and Brown's study which involved the coding of teacher guidance behaviors in educational gymnastics lessons with elementary age children. As the adaptations were few and primarily involved the expansion of a particular category, the instrument used in this research was considered valid.

Class (0,1,2)	Individual Small Group (3,4,5)	VERBAL BEHAVIORS
TASK INITIATION (1)		
10	13	-teacher asks students to move physically -no specific improvement values
11	14	-reiteration of task initiation -review or rewording of task
FOCUSING DIMENSION (2)		
20	23	-specific coaching points concerning how to improve the movement
21	24	-reiteration or review of coaching point
22	25	-statement of a general nature
TEACHER DEMONSTRATION (3)		
30	33	-specific coaching point is offered to draw attention to demonstration
31	34	-no specific information is offered
STUDENT DEMONSTRATION (4)		
40	43	-specific coaching point is offered to draw attention to demonstration
41	44	-no specific information is offered
QUESTIONING DIMENSION (5)		
50	53	-question posed to elicit a verbal response
51	54	-question posed to stimulate cognition or understanding of a movement
ACCEPTING DIMENSION (6)		
60	63	-positive reinforcement with specific feedback
61	64	-positive reinforcement without specific feedback
REJECTING DIMENSION (7)		
70	73	-rejecting behavior with specific feedback
71	74	-rejecting behavior without specific feedback
ORGANIZING DIMENSION (8)		
80		-movement, organization or discipline of pupils -includes apparatus and safety procedures
UNCATEGORIZED		
00		-behaviors uncategorizable

Figure 2. The Physical Education Teacher Guidance Analysis Schedule (PETGAS) with modifications (Mawer & Brown, 1982)

Coding Procedures

As the focus of this research was to describe in detail any guidance behavior sequences that may occur, event sampling was implemented to code the entire realm of apparent behaviors. According to Nedinnus (1976, p. 22),

> ...the unit of measure in time sampling is the occurrence of a given behavior in a certain period of time while in event sampling the unit of measure is the behavior itself, although the frequency of occurrence can be determined in event sampling.

As behavior identification is the prime objective of the study, event sampling was deemed necessary. Therefore in order to simplify the coding procedures the researcher transcribed all eight episodes so that coders could more easily identify the verbal 'events'.

Once all raw data were transcribed the researcher selected the behavior where the coding was to commence. Generally the coding episode began with a task initiation statement as that avoided any initial class organizing behaviors prior to the actual start of the lesson. It was projected that approximately fifteen minutes of videotaping would constitute a teaching episode but due to equipment malfunctions and the disregarding of lecture-type behavior prior to the students physically moving, the coding of behaviors was recorded from 12 minutes of videotape. Thus each teaching episode was 12 minutes in duration for all four subjects in both games and educational gymnastics.

After all the teaching episodes had been coded from both the videotapes and transcripts the data were placed on O.M.R. (Optical Marking Recorder) Data Coding Sheets and submitted to the computer for computation. The program analysis consisted of the data from the O.M.R. being organized via strata (listed by activity and subject in the order in which they were coded). The data were then analyzed according to frequency across activity and subject. Following this, the computer scanned each strata for all possible combinations of behavioral sequences of three. As this study was also to test the hypothesized model of teaching behaviors in movement education, the data was then aggregated according to the major categories outlined in PETGAS. Again the computer was to scan the aggregated file for sequences of two, three, four, and five behaviors. This computation was followed by a sorting of the listed behaviors sequences according to their frequency.

Inter-observer Agreement

The primary observer for this investigation was the researcher. One other individual, who was familiar with instruction strategies was trained for reliability measures.

The first session with the observer involved the reviewing of videotapes which included external instructors teaching a games and education gymnastics lesson. This three hour session involved both observers discussing and familiarizing themselves with the instrument. The next eight

hour session involved the coding of several example tapes by the criterion observer and the establishment of coding rules (Appendix B). These coding rules were necessary for several reasons, the first being to rectify any inaccuracies evident in the interpretation of the transcribed data. Various subjects included two or more behaviors in one sentence or extended one behavior over several staggered verbalizations. Coding rules were written to facilitate the reliable coding of such events.

The inter-observer agreement was conducted during a third session of two hours where both observers coded one teaching episode. Agreements were scored when both observers coded the same behavior for a verbal sentence. Disagreements were scored if each observer recorded a different behavior, or if one coder failed to identify a behavior.

The formula for percent agreement was calculated:

$$\frac{\text{number of agreements}}{\text{number of agreements + disagreements}} \times 100\%$$

(Johnson & Bolstad, 1973)

The interobserver agreement percentage for one episode in which one hundred behaviors were coded was 83%. This meets acceptable observer agreement standards as cited by Kazdin (1977, p. 142).

Once this was established the second observer coded another episode while the researcher coded the remaining 75% of the data.

IV. Results

This study attempted to address three problems related to teaching behaviors in movement education. The first problem involved the identification of frequent behaviors exhibited by the movement education specialists. Secondly, the data were to be analyzed to determine if particular sequences of behavior were evident in these movement education classes. Finally, the study focused on the sequential nature of behaviors to determine the applicability of these sequences to the hypothesized model of teaching behaviors in movement education.

Behavior Frequency

Frequencies of specific behaviors indicated that of the one thousand one hundred and fifty-six behaviors coded in the eight teaching episodes, 44.5% were those found in the games activity and 55.5% in the educational gymnastics activity. The range of behaviors across both activities but within subjects was 201 to 369 recorded behaviors in twenty-four minutes of teaching.

The results for each subject in both activities, across all behaviors, are presented in Figures 3 - 10.

The highest frequencies of behaviors appeared in the following categories: focusing dimension (37.3%), task initiation (23.4%), accepting dimension (9.8%), and questioning dimension (7.5%). Low frequencies were found in the following categories: student demonstration (3.6%),

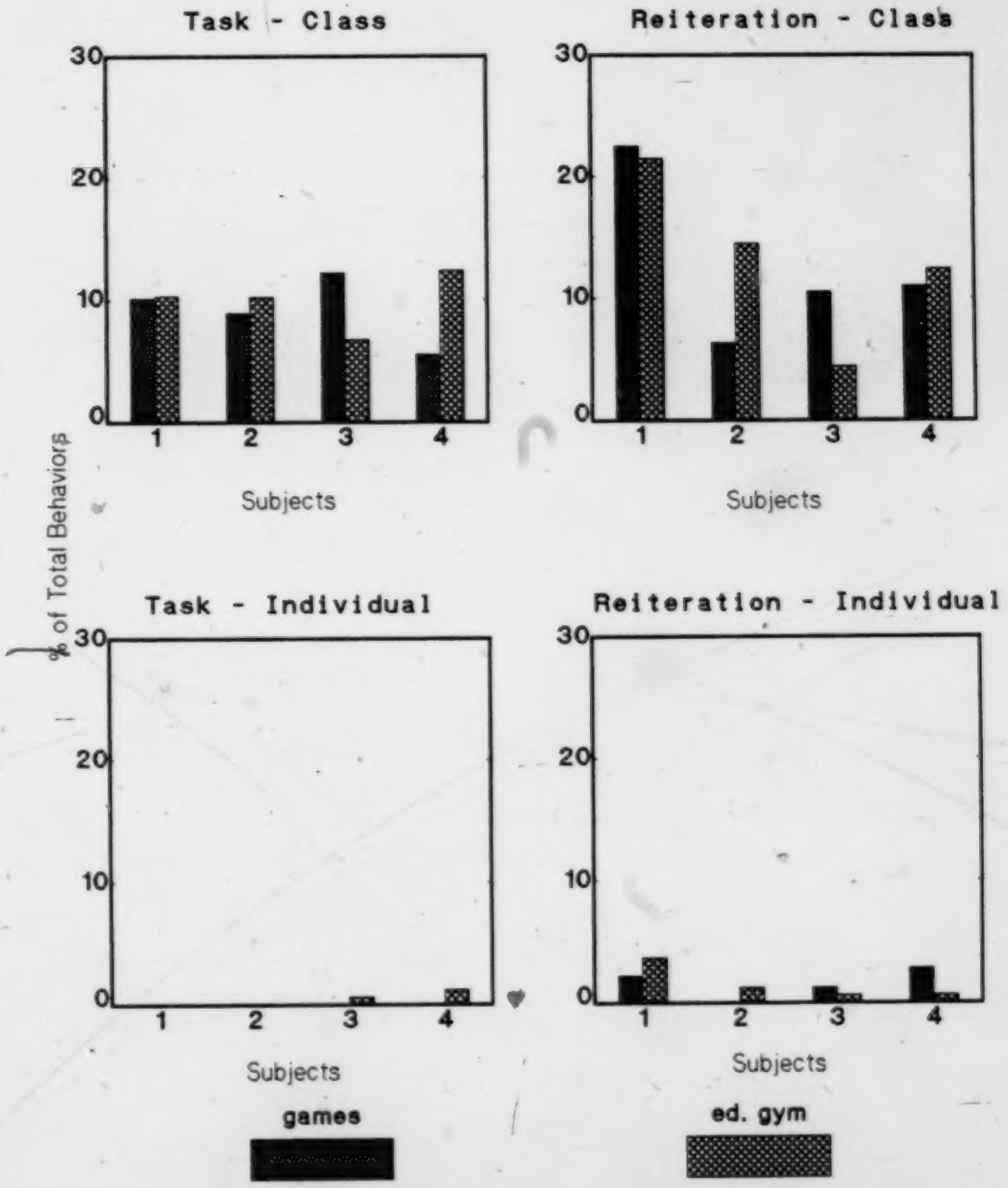

Figure 3. Task Initiation Teacher Behavior Frequencies

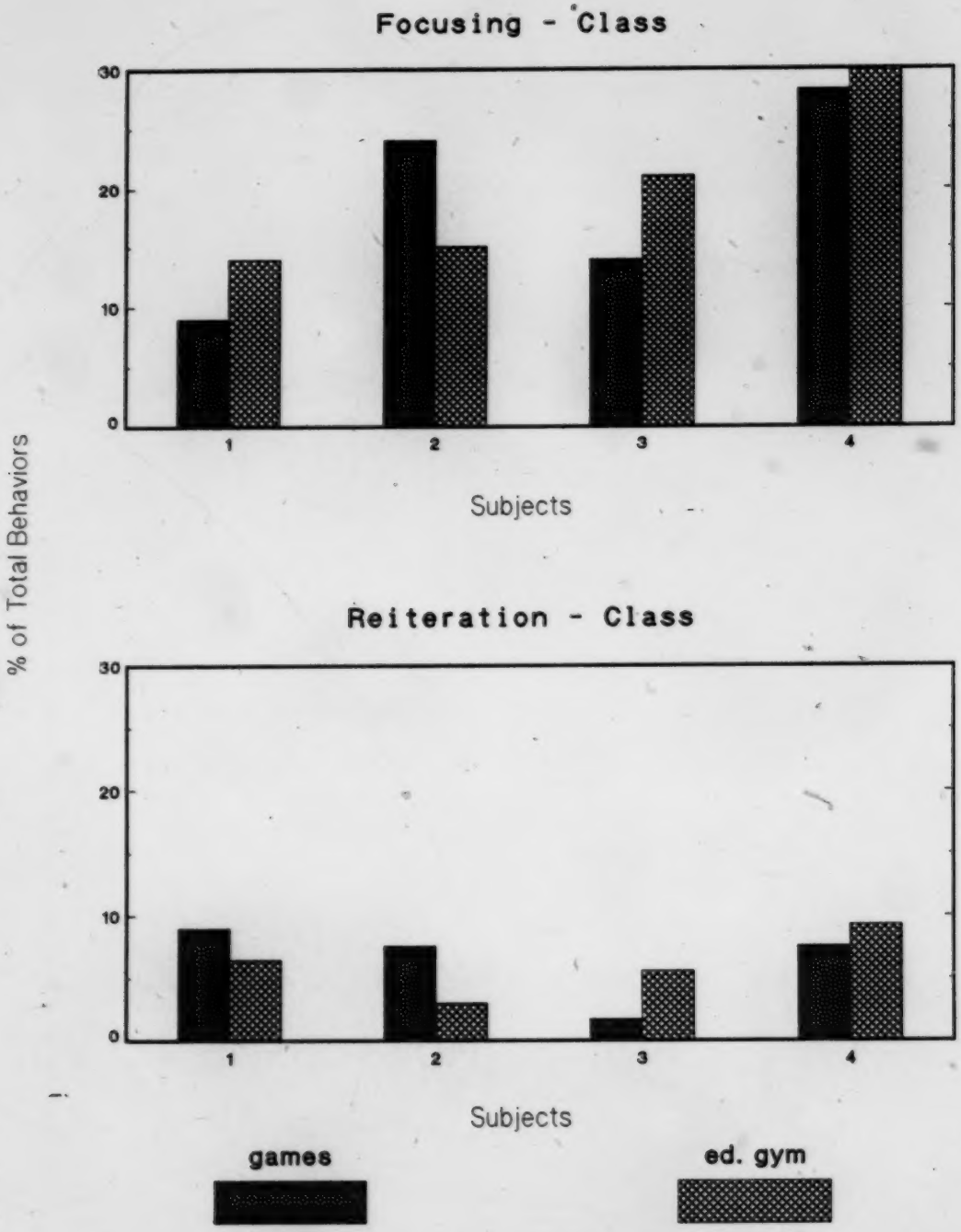

Figure 4. Focusing Dimension – Coaching Point Frequencies

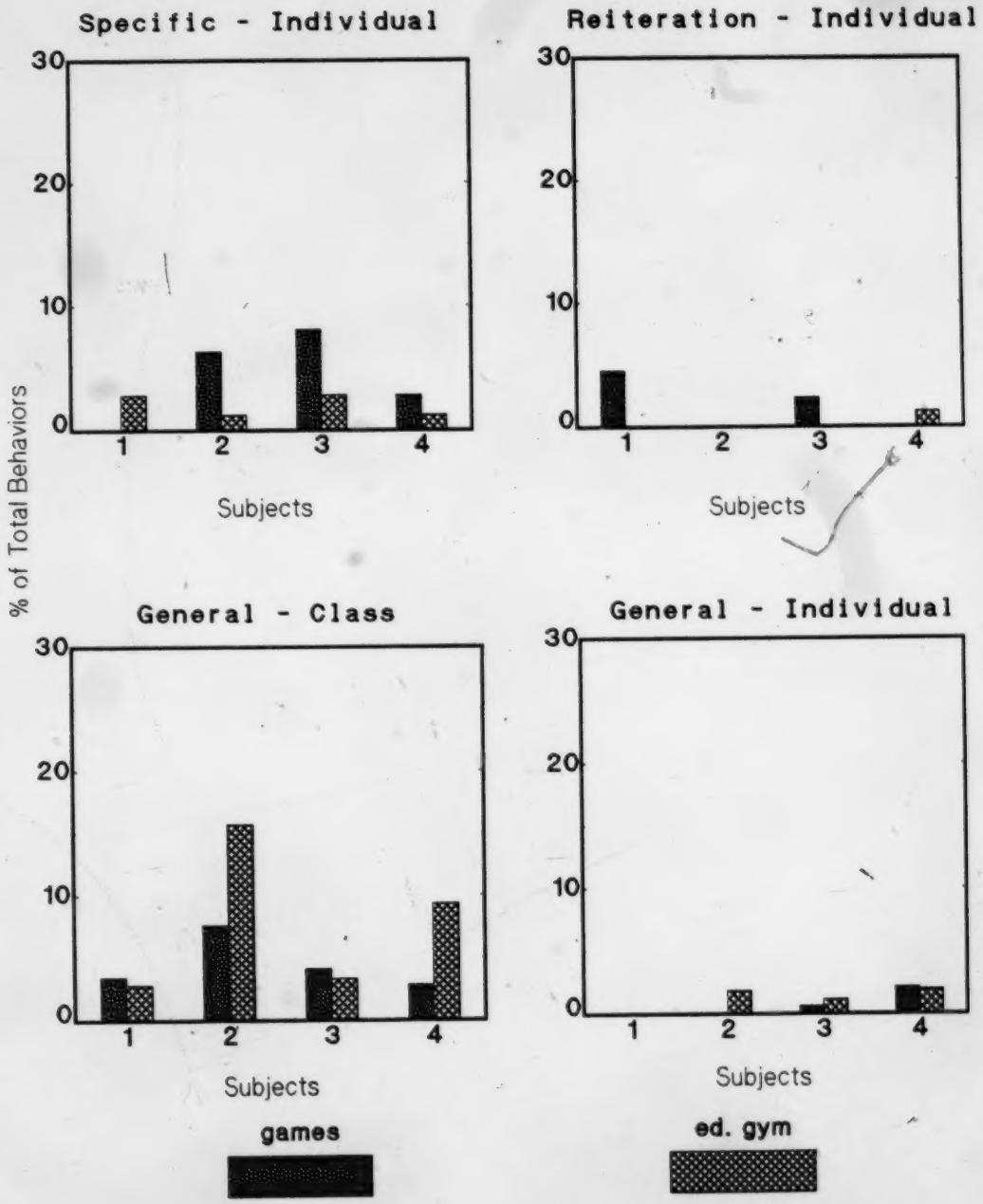

Figure 5. Focusing Dimension Teacher Behavior Frequencies

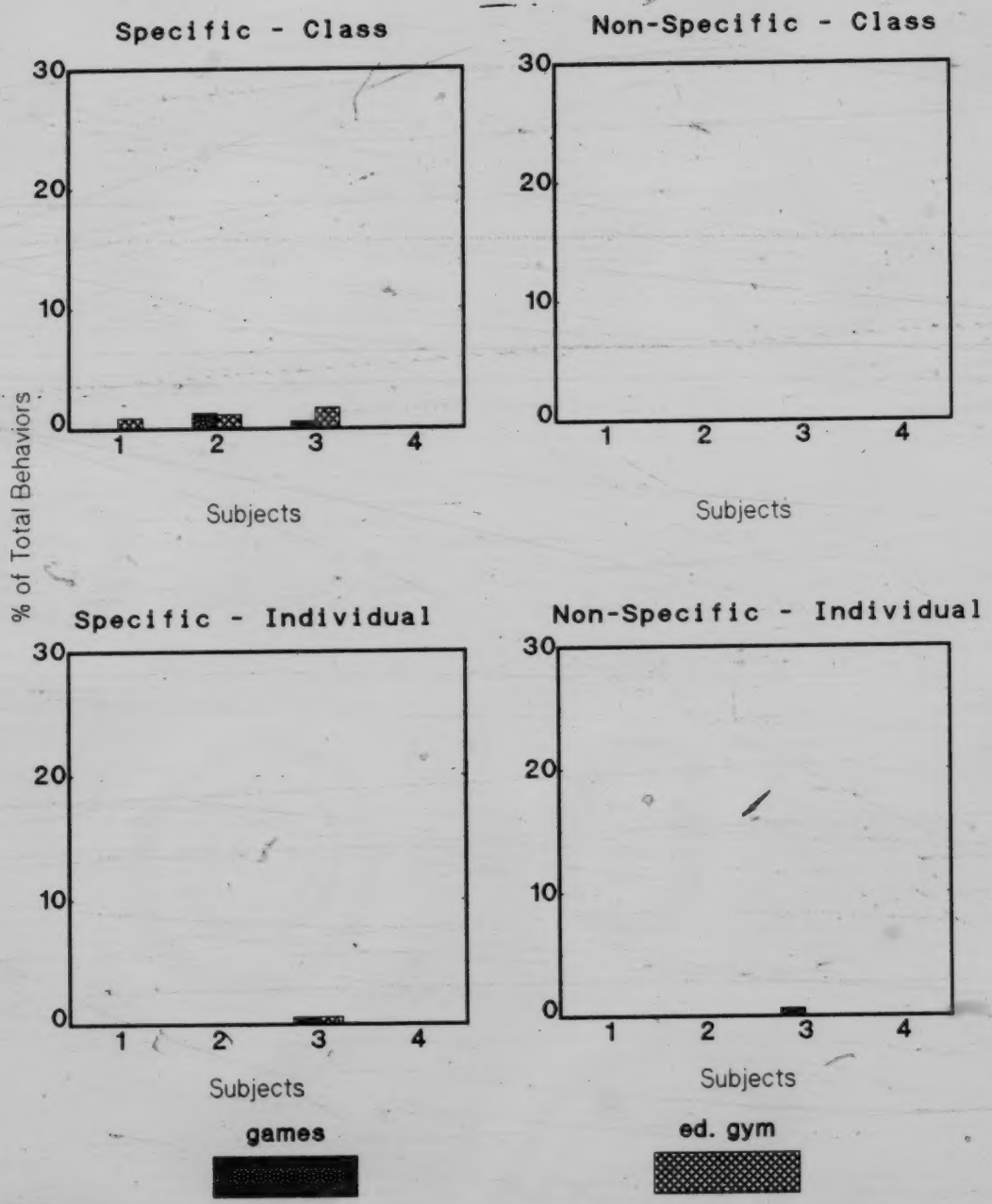

Figure 6. Teacher Demonstration Behavior Frequencies

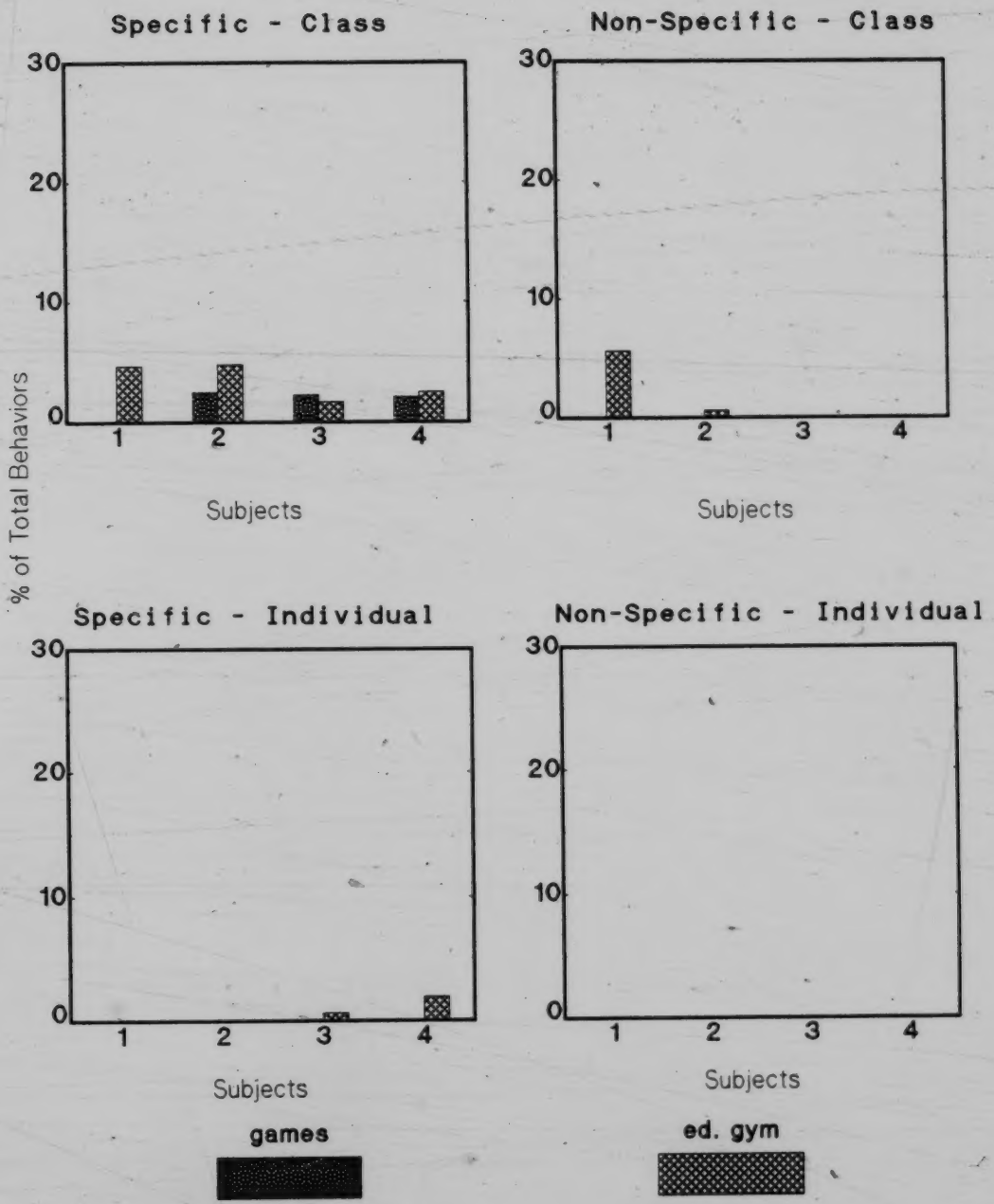

Figure 7. Student Demonstration Teacher Behavior Frequencies

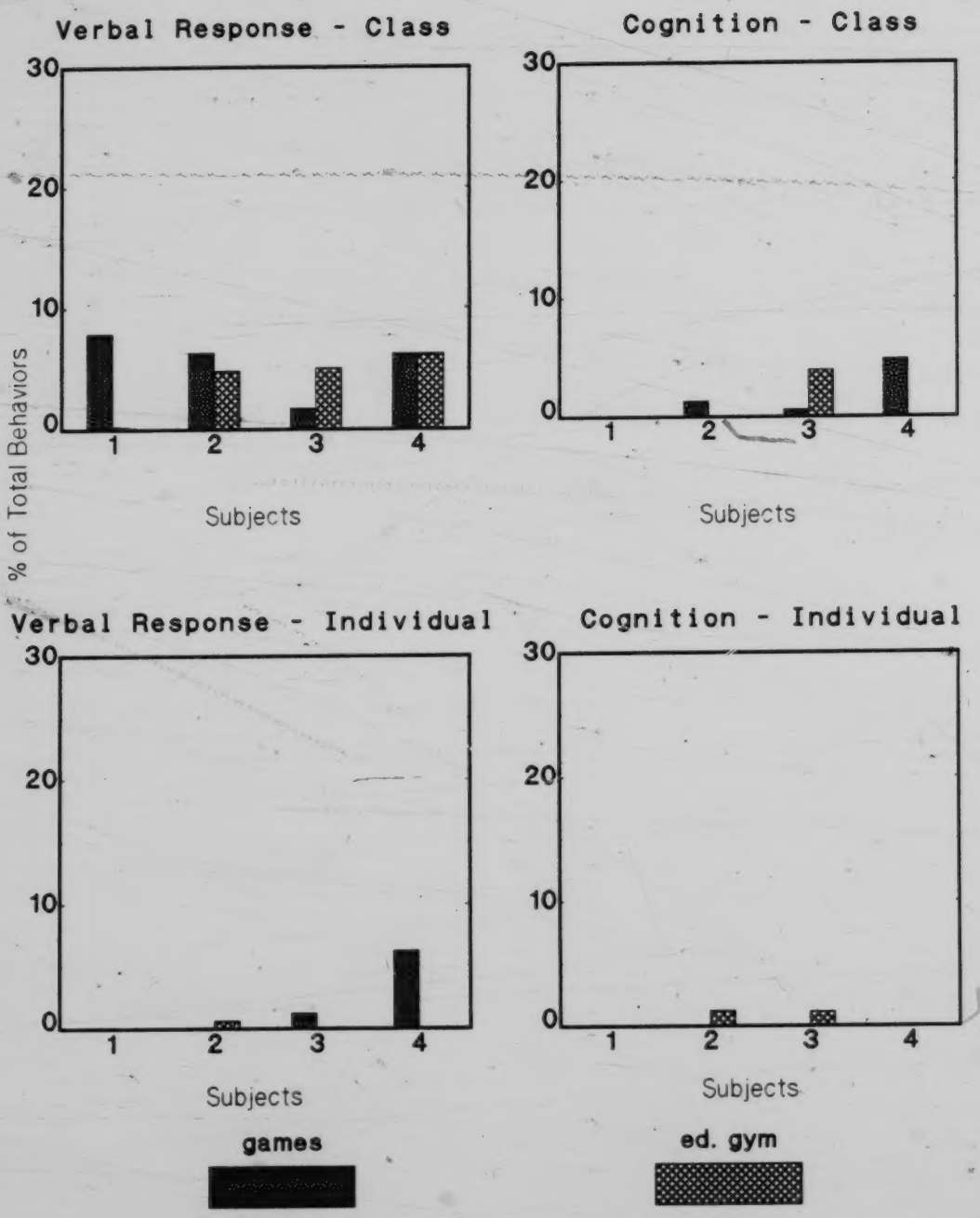

Figure 8. Questioning Dimension Teacher Behavior Frequencies

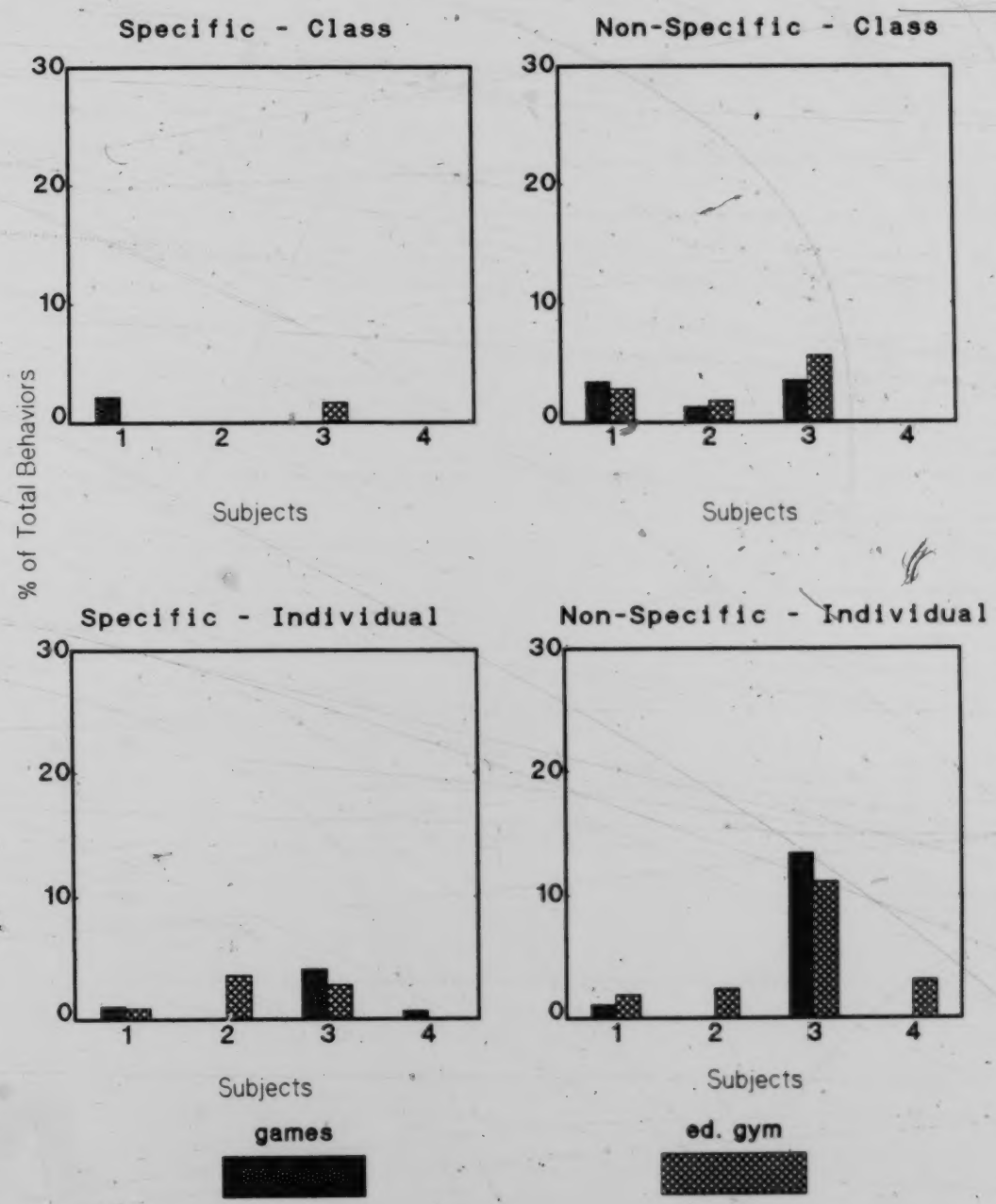

Figure 9. Accepting Dimension Teacher Behavior Frequencies

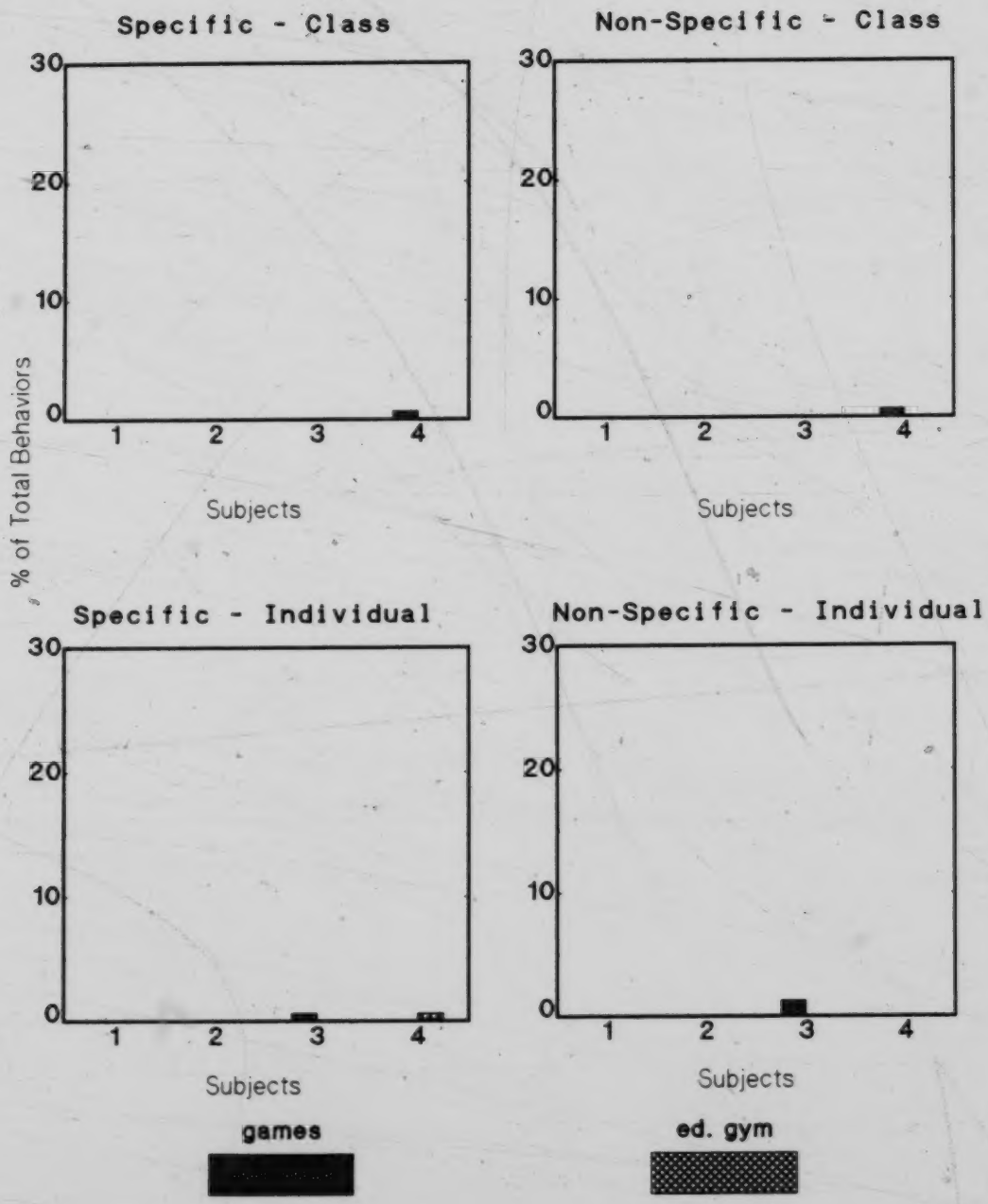

Figure 10. Rejecting Dimension Teacher Behavior Frequencies

teacher demonstration (1.0%), and rejecting dimension (0.6%).

Sequences of Specific Behaviors

The data were analyzed according to sequences of three individual behaviors. Thus the computer scanned each strata for all possible combinations of three behaviors and then sorted the sequences according to frequency. Seven hundred and seven sequences were evident with the highest frequency of 3.3% being the sequence of three specific coaching points concerning how to improve the movement given to the entire class. In light of the very low frequencies in the three behavior sequences a further analysis was done to examine sequences by disregarding consecutive repetitive behaviors and behaviors that involved reiteration. It was found in this subsequent analysis that the sequences with the highest frequencies in the three hundred and six cases were:

1. specific coaching point, task initiation, specific coaching point (5.2%),
2. task initiation, specific coaching point, organization of pupils (4.9%), and
3. organization of pupils, task initiation, specific coaching point (4.6%).

It is also worthy to note that all the aforementioned behaviors were directed towards the entire class.

Aggregated Behavior Sequences

The final data analysis concerned the aggregation of behaviors according to their major category (see Figure 2). Therefore, any behavior code in which the first digit was one (1), meaning it was a task initiation statement, was accordingly coded as one. All subsequent behaviors were also recoded according to their first digit. The data were then analyzed ignoring consecutive behaviors.

As this study was interested in analyzing guidance behavior following a task initiation statement by the subjects, the computer was asked to scan the aggregated file for sequences of two, three, four, and five behaviors which began with a task initiation code of one (1) (see Figure 11).

In the one hundred and thirty-three valid cases of sequences having two behaviors with the first behavior being task initiation, 66.9% of the sequences had a behavior from the focusing dimension. The second most frequent behavior, making up 16.5% of the sequences, was found in the accepting dimension and 9.0% were from the questioning dimension.

In scanning sequences of three behaviors across all subjects, the most frequent at 37.9% involved task initiation, focusing dimension, and task initiation. Behaviors involving task initiation, focusing dimension and accepting dimension made up 17.4% of all sequences, while sequences of task initiation, accepting dimension and focusing dimension accounted for 11.4% of the data.

Sequences of Two Behaviors (n=133)	% frequency **
1. TI, focusing dimension	66.9
2. TI, accepting dimension	16.5
3. TI, questioning dimension	9.0
Sequences of Three Behaviors (n=132)	
1. TI, focusing dimension, TI	37.9
2. TI, focusing dimension, accepting dimension	17.4
3. TI, accepting dimension, focusing dimension	11.4
4. TI, questioning dimension, focusing dimension	7.6
Sequences of Four Behaviors (n=126)	
1. TI, focusing dimension, TI, focusing dimension	21.4
2. TI, focusing dimension, accepting dimension, focusing dimension	10.3
3. TI, accepting dimension, focusing dimension, TI	6.3
Sequences of Five Behaviors (n=126)	
1. TI, focusing dimension, TI, focusing dimension, TI	13.5

**Any sequence that presented itself in the data with a percent frequency of 6.3 or greater is included in this Figure.

Figure 10. Most Frequent Sequences Commencing with Task Initiation (TI)

One hundred and twenty-six cases of four sequential behaviors were recorded with the first behavior being a task initiation. The three sequences with the highest frequency were recorded as:

1. task initiation, focusing dimension, task initiation, focusing dimension (21.4%),
2. task initiation, focusing dimension, accepting dimension, focusing dimension (10.3%), and
3. task initiation, accepting dimension, focusing dimension, task initiation (6.3%).

The most frequent sequence of five behaviors included task initiation, focusing dimension, task initiation, focusing dimension and task initiation. This particular sequence accounted for 13.5% of the sequences involving five behaviors.

The data indicate that there are sequences of three, four, and five behaviors that are frequently used by all of the subjects in their teaching of movement education. These sequences deserve scrutiny to determine whether they are in fact the basis of a model or framework for the teaching of movement education.

V. Discussion

This study examined the systematic use of guidance behaviors exhibited by movement education specialists. The behaviors coded using the modified PETGAS were initially analyzed according to individual frequency of each behavior. The computations were then focused to include the frequency analysis of the guidance behaviors across the four subjects as well as the two content areas, games and educational gymnastics. Following this, the data were organized according to sequences of three consecutive behaviors and listed according to frequency. A further examination of behavior sequences was performed when the data were aggregated, combining individual behaviors into major behavioral categories and compressing consecutive repetitive behaviors into one. Hence, the data were organized according to sequences of two, three, four and five aggregated behaviors. Finally, the results of the aggregated data were analyzed to determine the validity of the hypothesized model of movement education teaching behaviors. (see Figure 1).

Content Validity

The following analysis examines content validity outside the realm of the quantitative data analysis.

Following the inclusion of each individual as a subject in this study, information was provided concerning the content of the forthcoming videotaped lessons. After careful consideration it was decided the themes for the teaching

activities would be:

1. GAMES - Projecting using the feet and passing techniques.
2. EDUCATIONAL GYMNASTICS - Transference of weight using body actions such as jumping, stepping, and rolling with eventual emphasis on one of these actions.

Examination regarding content validity would assist this study in analyzing the objective or 'what occurred' in the videotaped episodes. The following is a brief analysis regarding content across subjects.

Games

Subject 1 began the lesson with a game of 'red light, green light' where the colour of light indicated the speed at which one was to travel or stop while controlling the ball with one's feet. Toward the end of the game the subject focused attention on ball manipulation. Following the game the students were asked to attend to moving along the lines on the gymnasium floor. Students were then asked to find partners and play follow the leader with the second individual dribbling the ball. Subsequently the task at hand became passing to a partner who provided a stationary target, followed by one partner becoming a moving target with both partners moving eventually.

Subject 2 commenced the lesson with general exploration of the space while controlling the ball with one's feet. The next task involved moving more quickly

but being able to arrest the motion of the ball on the teacher's signal. Following this, the students were asked to project their ball to a target on the wall, being sensitive to form and the distance to the target. In a partner situation the class was instructed to pass the ball to their stationary partner, this task was followed by both partners moving and passing.

Subject 3 began the lesson exploring different parts of the lower body that could be used to project the ball but still keeping it under control. The students were then asked to play a game with themselves containing intermittent dribbling and controlling of the ball. Next the students were instructed to project the ball towards the wall, controlling it on the rebound. Partner work was incorporated with stationary passing followed by the ball being passed so the partner would have to run onto it. Eventually both partners were instructed to move while passing the ball, attending to the distance and speed of the ball. Finally, the teacher instructed the students to group in three's and challenge each other to a one versus two situation.

Subject 4 began the class with partner work in a stationary position followed by both partners moving and challenging each other. A two versus one situation was subsequently developed.

Generally, the methods used by all four subjects were similiar with the lesson moving from simple

individual skills to more complex tasks and partner work and eventually to a two on one competitive situation. Thus, the actual content of the initial tasks were consistent across all subjects. Although not a focus of this investigation, general observation of the coaching points or focusing behaviors relating to task development showed an apparent similiarity in content.

Educational Gymnastics

Subject 1 began the educational gymnastics lesson instructing students to explore a variety of ways to rock the body. Students were then asked to make their rocking motions larger which may perhaps lead them into a rolling action. The subject then requested the students develop a movement sequence which involved the body actions of run, jump and roll. The next major task involved the exploration of body actions that involved a transference of weight from feet to hands to feet. The movement was then added to the sequence.

Subject 2 commenced the lesson with methods of transference of weight with emphasis on the feet followed by various actions involving flight and exploration of jumping actions. The students were then requested to experiment with feet, hands, feet actions. The subject then focused on static balances with the students rolling out of the balance and eventually into another balance. The subject concluded the episode with students creating a sequence of movements that included

the body actions run, jump roll, balance, roll and balance.

Subject 3 first instructed students in movement which involved light or jumping over the mats. The students were then instructed to use other body parts as well as the feet while they were transferring weight. Rocking actions were then explored which in turn lead to rolling action. The episode ended with the students exploring weight transference from feet to hands to feet.

Subject 4 asked the class to explore stepping, rolling and jumping actions. Focus was then directed to a variety of rolling actions followed by step-like actions and subsequently feet, hands, feet directions. Students were then to experiment with jumping actions. Finally the subject requested the students create a sequence with at least one stepping action, jumping action and rolling action.

The content across the educational gymnastics episodes possessed similiar qualities although various subjects may have emphasized one particular method of transference of weight over another. Three of the four subjects incorporated the ideas of sequences of movement in the teaching episode. Once again further analysis of the focusing behaviors following specific task initiation statements would help differentiate the characteristics of focusing behaviors used by the

subjects.

It was the opinion of the investigator that stipulations regarding content validity were met by all the subjects. Therefore variability in teaching behaviors due to the content were not considered to be significiant.

Individual Behavior Analysis

In examining individual behaviors across all four subjects and both activities it was found that the most frequent behavior occurrence was in the focusing dimension (37.4%), followed by task initiation (23.6%). As stated in PETGAS task initiation behaviors involved the teacher asking the students to perform physically a new movement idea. Focusing behaviors involved providing coaching points on 'how' to improve the initial task as set. Thus, it seems natural that there would be a higher frequency of behaviors which instruct or guide the student's improvement of a particular movement task set. Generally, the occurrence of a task initiation such as, 'I want you both (partners) to be on the move, both be on the move passing (the ball) to each other', would be followed by the teacher scanning the class and then suggesting appropriate coaching points which focus on the task at hand. Such points as, 'move about (the space) and really look where that person (your partner) is about to move and make it clear to them', or 'be sensitive or sympathetic to the distance (between you and your partner)',

are examples of coaching points, from the games activity, which focused on improvement of the initial task.

Guidance from the accepting dimension represented 9.9% of all behaviors. The majority of these behaviors focused on the acceptance of individual efforts. As cited previously (Fowler, 1981), positive feedback as simplistic as a smile or nod, can provide encouragement. With closer scrutiny it was evident that 6.9% of the behaviors from the accepting dimension were just that, a simple 'good, Susan' or 'nice, John'. Thus, very few positive reinforcement statements included specific feedback concerning 'why' the movement was acceptable. On further examination, it was discovered a majority of these behaviors occurred significantly more often with one particular subject. This will be discussed later on in the chapter.

Behaviors represented in the rejecting dimension were found to have the lowest frequency of the seven major categories (0.6%). Proponents profess that one of the objectives of movement education is to provide a positive environment so that the student will hopefully experience optimal learning and have the desire to repeat the movement encounter (Fowler, 1981; Stanley, 1977; Wilson, 1979). In careful examination of the videotape and transcripts, it was found that most often, if the students were off-task, the teacher would exhibit one of the following guidance behaviors:

1. reiteration of the initial task with special emphasis on

the particular movement quality the students are negating. For example, 'O.K., now try to concentrate on the part of the foot which is most efficient in getting the ball to your partner'.

2. asking a question which may create an awareness in the student that their movement is off-task. For example, 'now what is the pathway of your foot before, during and after contacting the ball?'.

Hence, instead of providing negative feedback, the teacher either reiterates the task or asks a question to stimulate the student concerning the off-task movement.

Feedback, or knowledge of results (KR) during a movement activity has been proven repeatedly to be instrumental in controlling performance and learning. Regardless of whether the feedback is presented in a positive or negative form, knowledge of performance or information feedback is necessary to enhance progressive improvement of a motor task (Bilodeau, 1966). Sage (1971) in reference to feedback stated,

> ...knowledge of results improves learning and performance, is a principle that holds for children and adults and for groups as well as individuals (p. 337)

Therefore, results indicate that the specific feedback behaviors or knowledge of movement performance found in the accepting and rejecting dimension are low if task improvement is to be optimal. This is in contrast to Smith's

(1974) work where a large number of 'accepting' behaviors were found. The students in Smith's study however were children and non-swimmers, not adult learners who may be presumed to be more independent learners.

It is of interest to note that despite the low frequency of behaviors that were considered to be specific feedback according to the instrument used in this study, this may not necessarily mean that feedback was not provided. As the philosophies of movement education state that the cognitive realm of the individual also be developed, it is hypothesized that specific feedback may have been disguised as a reiteration of the task, refocusing of a coaching point already provided, or a question which does not necessitate an immediate answer. Thus the specific feedback may be 'embedded' in a behavior not necessarily viewed as feedback. In this presentation of feedback the learner is made responsible for synthesizing the information provided by the teacher and determining through self-evaluation or refocusing of a coaching point what behaviors are acceptable.

It is interesting to note at this point that many critics of movement education believe that a lack of constructive positive/negative feedback or structure elicits a circus of 'free-for-all' task initiation statements and a lack of functional movement of high quality. Yes, the instructor may begin a task with a 'how many ways can you....' statement, but as with any competent teacher, a

movement educationalist knows 'about' the desired lesson objective and has carefully planned the 'how' in terms of reaching the set objective. Through a carefully planned, systematic set of tasks the teacher will eventually funnel the acceptable movement response range such that the movement challenges the student but does not neccessarily fall into a standardized pattern for the entire class. Therefore critical features of the movement, such as quality of movement, replicability, control, and specific theme objectives must be evident in the student's movement in order that the movement be in the acceptable response range. All too often the investigator has witnessed novice movement education teachers who believe in the philosophies 'about' movement education, but unfortunately lack the experience or perhaps the knowledge concerning 'how' to properly implement the philosophies.

Rosenshine and Stevens (1978) stated earlier that during guided student practice a high frequency of questions relevant to content should be employed to keep students cognitively stimulated, on task, and provide the teacher with an evaluative means of checking for student understanding. Behaviors from the questioning dimension consisted of 7.9% of the data. According to the emphasis placed on questioning in the Rosenshine and Stevens model of teaching behaviors/functions during guided practice, this figure may seem relatively low. In analyzing this finding it is important to note that this group of students consists of

young adult learners. Locke (1983) emphasizes that there are differences in adult and child learning processes. Firstly, he states that adults do not learn in the same way as children. Several reasons this include:

1. adults begin most learning tasks with a much larger experiential base;
2. adults have acquired cognitive skills which are different from those of children in both kind and sophistication; and
3. adults can employ and may even prefer learning methods which are not possible for most children (p. 286).

Therefore, questioning in this particular analysis of data may not have been as prevalent as suggested by Rosenshine and Stevens due to the following:

1. The cognitive abilities of the students did not necessitate a question-answer forum concerning the 'why's' of the particular content involved. The students may have already had the experiential base relative to the movement patterns which were the focus of inquiry. Also, the cognitive and physical capabilities of the students in this study provided variability in competence levels and this factor was not controlled in the investigation's implementation.
2. The level of questions were so sophisticated that fewer were needed to focus on the intended point of emphasis.

Comparatively lower frequencies were discovered in the categories of: student demonstration (3.6%), teacher demonstration (1.0%).

Several authors state the values of demonstration in enhancing student learning (Bandura, 1977; Fowler, 1981; Kruger & Kruger, 1977; Rosenshine & Stevens, 1987; Stanley, 1977) yet only 4.6% of all guidance behaviors involved demonstration by either the teacher or the student. Assumptions could be made that the movement patterns of the students, presented an adequate variety and were relatively on task, thus demonstration examples were not deemed necessary. It is worthy to note that in the demonstration presented, a majority involved the teacher drawing attention to specific coaching points of the movement.

It was also discovered that only 16.5% of all behaviors were directed toward the individual or small group. On further analysis 5.3% of these behaviors involved non-specific feedback. Proponents of movement education state the value of individualized instruction in meeting the needs of all students, thus providing the opportunity for the students to proceed at their own rate of development. The frequency of behaviors which provide specific feedback or coaching points to individual students is relatively low in accordance with proposed teaching objectives in movement. Generally when a new idea or task is presented to the class, a majority of the behaviors should be general in nature and should focus the movement of the class at large. Hence, as

the class progresses and the acceptable response range becomes more clear the teacher is given the freedom to coach individual efforts. Therefore, it is more likely that verbal behaviors directed towards the individual be evident towards the end of the lesson or unit as compared to the beginning. The teaching episodes in this study occurred at the beginning of a unit and this may be why more of the teaching behaviors were class-directed and non-specific rather than specific feedback directed to individual students. Accordingly, it is very important that teachers develop their observation techniques in order that they may more efficiently foster the individual efforts of their students (Barrett, 1977; Fowler, 1981; Stanley, 1977).

Variability Across Activities

Behaviors exhibited in the games episodes accounted for 44.5% of all behaviors as compared to 55.5% in the educational gymnastics episodes. On closer examination, it appears that the variability of behaviors across activities in the major categories is minimal. Therefore, this finding suggests that the subjects in this study exhibit similar teaching behaviors regardless of the content of the lesson. Also it is evident that within the same time constraint, the teacher is likely to interact more with the students during the educational gymnastics episodes eliciting more behaviors from all categories.

As a general observation conducted from the videotapes, the investigator found that the subjects verbalized more in the educational gymnastics activity than in the games activity. It is speculated that due to a higher noise level in the games activity, the subjects were more likely to arrest class activity, offer guidance and then resume the movement experience with minimum verbal guidance throughout. In the educational gymnastics activity however, guidance behaviors appeared throughout the activity as needed.

Variability Across Subjects

Behavior frequencies, across the four movement education specialists in this investigation, displayed frequencies of variability in the seven major behavioral categories. The overall picture provided by the behavior analysis indicated one thousand one hundred and fifty-six behaviors were recorded across all activities and subjects. The average number of behaviors was recorded at two hundred and eighty-nine, with the range showing Subject 1 exhibiting the lowest frequency (n=201) while Subject 3 tallied the highest frequency (n=369) across both activities during the twenty-four minute videotape analysis of each subject. Thus, the following behavior percentages reflect differing frequencies for each of the four subjects.

The average of all task initiation behaviors recorded was 24.1% of the total behaviors exhibited. More than half of these were statements that reiterated the movement

request already presented. In both games and educational gymnastics, Subject 1 recorded the most task initiation statements relative to all behaviors exhibited (35.1% and 35.5%, respectively). It is interesting to note that 70.9% of all task initiation statements exhibited by Subject 1 as compared to 48.0% for Subject 2, were statements reiterating the task already presented. Thus Subject 1 most frequently set a task for the students and subsequently spent 24.9% of her recorded behaviors rewording or reviewing the initial task.

Regarding behaviors found in the focusing dimension, the average number recorded for the four subjects was 36.9% across all behaviors. Subject 4 recorded the highest frequency of focusing behaviors (48.5%) of which 64.6% were novel coaching points aimed at improving the movement. Subject 1 exhibited the lowest frequency of focusing behaviors (26.0%) and 53% were new statements to improve movement.

Subject 4 also exhibited the highest frequency of behaviors from the questioning dimension (8.6%) with the subject average calculated at 6.6% of the total behaviors recorded.

Griffey and Housner (1984) examined expert-novice differences in planning strategies, behavior and student engagement. Results indicated experienced teachers exhibited more questioning, praising and giving directions than inexperienced teachers. Although all the movement

educationalists are specialists in the field, Subject 4 is the most experienced. And as indicated in the study generally the more experienced teachers have a wider repertoire of situations to draw from and therefore can exhibit a greater variety of behaviors in a given situation. Subject 4 registered the highest frequency across the four subjects in the questioning dimension and was the subject that provided the students with the greatest number of coaching points to improve their movement. However, in analysis of the accepting dimension, providing praise, Subject 4 tallied the lowest frequency (2.2%) across all subjects.

In examination of behaviors recorded from the accepting dimension, the range of frequencies was 2.2% to 21.1% of all recorded behaviors. The average across the four subjects (8.7%) indicated that Subject 3 (21.1%) had significantly more accepting behaviors in comparison to other subjects. On closer examination it was discovered that 79.6% of the accepting behaviors recorded for Subject 3 involved positive reinforcement without specific feedback. Thus, Subject 3 displayed a high frequency of behaviors which manifested themselves in 'Good, Zelda' and 'Nice work, Bertha'. As Fowler (1981) pointed out, positive reinforcement can be as simple as a smile or nod of the head. And as proponents of movement education reflect in philosophy, it is a positive experience which the student should want to repeat that is an important consideration (Stanley, 1977; Wilson, 1979). But

Rosenshine and Stevens (1987) cited careful direction and guidance through activities as a major component of the guided practice model which leads one to speculate just how helpful is positive reinforcement without specific feedback.

Behaviors in the rejecting category reflected the lowest frequency across all seven categories (0.6%). Subjects 3 and 4 recorded behavior frequencies of 1.8% and 2.0% respectively, in the rejecting dimension. No rejecting behaviors were identified for Subjects 1 and 2.

Although very few behaviors were recorded in the teacher demonstration category (1.0%), Subject 3 registered behaviors in five of the eight sub-categories (0.82%). And in examination of behaviors that involved student demonstration (3.6% of all behaviors), Subject 1 incorporated student demonstration for the benefit of the class most frequently in the educational gymnastics activity.

Inter-subject comparisons indicate that there is indeed some variability in the use of behaviors in each of the behavior categories. However, the percentage of variability, in accordance to the length of the analyzed teaching episodes, is surprisingly low. Therefore, it is evident that the subjects in this study exhibit behaviors that are relatively similiar when given the same teaching objectives.

Sequences of Specific Behaviors

The highest frequency (3.3%) of three specific behaviors recorded consecutively involved the teacher providing coaching points on improving the movement of the class. This frequency was not deemed significant in light of the total number of sequences examined (n=707). Therefore it was assumed that the large number of possible behavior codes (n=30) led to insignificant findings.

In light of the low frequencies a further analysis was computed disregarding consecutive repetitive behaviors. Again, very low frequencies were found, with the highest being 5.2%. This particular sequence involved the teacher providing a specific coaching point to the class followed by initiating a new task and subsequently providing a coaching point for improving the task. Olson (1982) found similiar results when analyzing teaching behaviors independently. While it is logical that a coaching point should follow a task set, further analysis of the content in behaviors following task initiation is necessary. Unfortunately, due to the limited sensitivity of the PETGAS, differences in coaching points could not be recorded.

Aggregated Behavior Sequences

When behaviors were analyzed according to the major categories, it appeared strongly evident that a cyclical pattern including task initiation, focusing dimension, and a return to task initiation was consistently present

regardless of the sequence length. This cycle was most prevalent in Olson's (1982) findings.

Sequences involving task initiation followed by behaviors from the focusing then accepting dimensions were the second most frequent. Once again it appears logical for the teacher to set the task, scan the class providing coaching points to improve the students' movement or to keep the class on-task and then provide positive feedback or encouragement for the movement performances.

Westerhof (1983) stated that behavior patterns, timing and context play important roles in the research on teaching. However, sequential patterns or descriptions of these patterns had provided no positive findings in their effect on research in teaching. Thus, providing novice movement educationalists with the knowledge that a focusing behavior following the task given to the class, is most frequently used by movement education specialists, does not guarantee effective teaching on the part of the novice.

The initial investigatory objective of this study was to describe teaching behaviors of movement education specialists via PETGAS and to identify the sequences of behaviors exhibited. In this regard the study was successful.

Applicability to Model of Movement Education

In review, the hypothesized model of teaching behaviors in a movement education class yields two cyclical patterns:

1. task initiation, focusing dimension/questioning dimension.
2. task Initiation, focusing dimension/questioning dimension, task initiation, teacher/student demonstration, focusing dimension.

It was discovered that the first cycle presented in the model, task initiation followed by focusing dimension, was supported by the findings in this study. All four subjects typically demonstrated this behavior cycle. In fact, focusing followed task initiation 66.9% of the time. Evidence did not support the hypothesized cycles that involved behaviors from the questioning or demonstration dimensions. This was likely due to the extremely low frequency of these two behaviors.

Olson's study, which supported the behaviors found in the primary teaching cycle, suggests that this and other cycles are not necessarily restricted to the teaching of movement education or the teaching of adults. Olson's subject group taught a wide range of activities to students of all ages (elementary and secondary school). Behavioral sequences discovered in her study were very similiar to those found in this investigation (with the exception of those sequences that included student behaviors).

The results of this study then raise the question - what makes movement education an entity in itself? The findings presented do not support Rosenshine and Stevens (1987) model of the guided discovery process, since

questioning and demonstration behaviors were minimal. Thus, the pedagological process as measured by the PETGAS instrument does not differentiate movement education from the teaching of other activities. The cycles of behavior found in this study are similar to those found in Olson's study of variable physical activities. These cycles do not clearly reflect the generally accepted principles that are assumed to characterize the teaching of movement education.

Hence, if the pedagological process does not reveal differences between the teaching of movement education and the teaching of other physical activities perhaps the specific teaching content of movement education should be scrutinized. Although behaviors across activities in this study supported the idea that limited behavioral change existed in the subjects regardless of activity, further analysis which examines discrete content variability is needed. Replication of this study and further investigation are necessary in order to substantiate movement education philosophies.

VI. Summary and Conclusions

Summary

The major focus of this study was to identify the teaching behavior sequences of four movement education specialists. The investigation was dealt with in three phases. Firstly, the data collected were analyzed, using the Physical Education Teacher Guidance Analysis Schedule (PETGAS), to identify those behaviors typically exhibited by movement education specialists. Secondly, the data were analyzed to determine if particular sequences of teaching behavior were evident in the movement education class. Finally, sequences found most prevalent in the teaching behaviors of the movement education specialists were analyzed in relation to their applicability to a hypothesized model of cyclical behavior patterns in movement education. The long range intention of the investigation was to provide descriptive information on 'how' an effective movement educationalist behaves.

The subjects of this study were four individuals employed at a Canadian university who had extensive experience in the teaching and philosophies of movement education. Each subject was videotaped teaching one games and one educational gymnastics activity class to university students. Following the completion of data collection, each instructional episode was coded according to behaviors provided in the modified PETGAS. One other individual,

familiar with instructional techniques, coded 25% of the data as a measure of inter-observer agreement.

The data were then computed to provide frequencies across both activities and subjects. Further analyses provided frequencies for sequences of two, three, four and five behaviors.

Conclusions

It was determined that all four subjects exhibited behaviors that were relatively similiar in light of the behavior variability and limited instructional data analyzed. Furthermore, in review of the instructional episodes, it was found that content variability was limited.

In analysis of sequential behaviors exhibited by the movement education specialists it was found that the teachers were most likely to provide a focusing behavior or coaching point following the initiation of a task. Research indicates this behavioral pattern is logical and it was found applicable to teaching behavioral patterns in a variety of physical activity settings as well as movement education classes.

Finally, results and conclusions serve to indicate that the teaching behavior patterns found in the hypothesized model of movement education, did not differ from those reported by Olsen in the instruction of other physical activities.

Recommendations

Due to the limited amount of research done on the teaching and analysis of movement education this investigation may shed some light on proposed philosophies concerning movement education. Subsequently, it would seem the primary recommendation would be the expansion of a research base concerning the teaching of movement education. Replication of this study, incorporating various age groups and activities other than those found in this investigation would provide valuable information concerning the variability of teaching behaviors associated with movement education.

However, there seems to be enough evidence from the results to recommend investigation regarding the contextual base within movement education. It is believed that combining energies to quantitatively substantiate the benefits movement education has to offer will lend strength to its fight for survival in institutions of higher education.

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APPENDICES

Appendix A

PETGAS

Mawer & Brown's (1982)

THE PHYSICAL EDUCATION TEACHER GUIDANCE

ANALYSIS SCHEDULE (PETGAS)

Rejecting Dimension

R - Rejecting the behaviour of the class, group or individual for discipline reasons.
Rg (Class) and Ri (Inidivdual/Small Group) - the teacher is rejecting the response of the class or individual. The teache: is not satisfied with the response and is critical.

Focusing Dimension

Fg (Class) and Fi (Individual/Small group) - the teacher makes a statement of a general nature and does not offer any specific information concerning how to improve the movement.
FgSp (Class) and FiSp (Individual/Small group) - the teacher is making a statement for the purpose of improving the movement they are performing or have completed. Specific coaching points concerning h ow to improve the movement are offered.
FgV (Class) and FiV (Individual/Small group) - the teacher is using a demonstration but no specific information is offered.
FVSp (Class) and FiVSp (Individual/Small group) - the teacher is using a demonstration and draws attention to specific coaching points concerning the movement.
FgV - the teacher has asked a pupil or group of pupils to demonstrate the movements they have been performing for the rest of the class to observe. No specific additional information is offered.
FgVSp - as FgV but the teacher draws the attention of the class to specific aspects of the demonstration.

Accepting Dimension

Ag (Class) and Ai (Individual/Small group) - the teacher offers positive feedback and reinforcement in the form of praise, without saying specifically why the response was good.
AgSp (Class) and AiSp (Individual/Small group) - the teacher praises the response and in addition tells the pupil why the response was good.

Questioning Dimension

Qg (Class) and Qi (Individual/Small group) - the teacher asks a question for the purpose of developing their understanding of the movement or to elicit from them an answer to a movement problem. Organizing Dimension

O - movement and organization of pupils, apparatus, safety.

Unrelated Statements

U - any interactions not able to be categorized.

Appendix B

Coding Rules

1. Each sentence will be assigned 1 code. If more than one behavior is evident in the sentence than the foremost behavior will be coded.
   e.g. 'Good, now let's try moving using all the space.'
   -as 'moving using all the space' is the foremost behavior it will be coded as 'TASK INITIATION' and therefore 'good' will not be coded as 'positive feedback'.

2. Codes involving 'DEMONSTRATION' of either the teacher or student will involve full body manipulation. Therefore gestures of the arms moving quickly to signify speed will not be coded as demonstrations.

3. 'TASK INITIATION' codes will be assigned to verbal behaviors which initiate a <u>new</u> movement idea. This behavior does not intend to improve the previous movement idea.

4. 'COACHING POINTS' coded will be assigned to verbal behaviors which intend to improve the movement or 'TASK' code.
   e.g. 'Now run around the room' -task initiation
   'Faster' -coaching point
   'Use all the space' -coaching point
   'Stop' -organization
   Now while you're running I want you to jump as high as you can' -task initiation

5. 'REITERATION' codes will be assigned to verbal behaviors which do not involve new ideas <u>but</u> rather reword an idea already stated.

6. Codes regarding the questioning dimension should reflect stimulation of the cognitive realm or verbal response.
   e.g. -'How are you moving around the room?' If teacher asks for the <u>verbal</u> response from the class it is coded as such. If the teacher leaves the idea and the question does not involve specific coaching points concerning the movement it is coded as <u>understanding.</u>
   e.g. -A question such as 'Can you get your hands flat?' - directly refers to the improvement of movement and should be coded as a 'TASK' or 'COACHING POINT'.

7. Comments regarding the verbal behavior 'Think about...' will be generally referring to a particular coaching point. If the teacher says 'think' or 'concentrate' they should be coded as being of a 'GENERAL NATURE'.

8. If you are unsure of which code to use for a behavior or the behavior fits two categories and one does not appear more evident than code the behavior 'NOT ABLE TO CATEGORIZE'.

9. Begin, listen or stop shall be coded as class management.